15c

The OIL WEEKLY

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

"A Decade of Progress"

LIBURTON OIL WELL CEMENTING COMPANY ON ITS 10TH ANNIVERSARY

VOLUME 74 JULY 30, 1934 NUMBER 7

7 GO-GETTERS

LOWEST COST
because they—
SERVE LONGER

The economy of Union Lines is what has sold them to Arthur Brewer. Mr. Brewer, contractor on this Lewis Production Company well, is using Union Lines in his operations. He has found them uniform, and durable—thus economical in the long run. Mr. Brewer is a go-getter, and the equipment he uses has to qualify under that description, too. Left to right the men are: Earnie Gillespie, Jarecki Mfg. Co; Arthur Brewer, contractor; H. S. Everett, Lewis Production Co.; J. M. Shackelford, driller; L. Bailey, tool dresser; J. A. Undercofler, Union Wire Rope Corp.

UNION WIRE ROPE CORPORATION

3 North Madison Ave., Tulsa, Okla.

Branch Office and Warehouse: Portland, Ore. Warehouse: Monahans, Tex. Factory: 21st and Manchester, Kansas City, Mo.

JARECKI MANUFACTURING CO., Mid-Continent and Eastern Oil Field Distributors—Stocks at All Stores

MARION MACHINE FOUNDRY & SUPPLY CO., Rocky Mountain Fields

SABALO TRANSPORTATION CO., (A Katz Organization) Stock at Tampico, Mexico

UNION WIRE LINES

The "ULTIMATE LOW COST WIRE ROPE"

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

©C1B 235962

THE OIL WEEKLY

ENGINEERING « STATISTICS » THE WEEK'S NEWS

EDITORIAL STAFF

WARREN L. BAKER
Editor

J. KENT RIDLEY
Managing Editor

ASSOCIATE EDITORS

JACK LOGAN — BRAD MILLS
WM. V. GROSS

DISTRICT EDITORS

B. F. LINZ.....Washington
FLOYD SWINDELL .....Tulsa
H. H. KING.....Fort Worth
W. E. GREEN.....Los Angeles
EARL S. POST.....San Antonio
R. W. BYRAM.....Austin
CHAS. LEYENDECKER.....Houston

PUBLISHED BY
GULF PUBLISHING COMPANY
HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*

ADVERTISING STAFF

DICK SWINSKY.....New York
W. W. PIGUE.....Pittsburgh
T. W. NELSON.....Chicago
J. F. CARTER, JR.....Tulsa
W. E. GREEN.....Los Angeles
CHAS. WYATT.....Houston
WM. ATCHESON.....Houston

W. J. HUDSPETH
Circulation Manager

Contents » July 30, 1934

Volume 74 ◆ Number 7

THE CHANGING PANORAMA..... 5

NEWS OF THE WEEK:

The Next Five Months..... 6
Record Casing String Landed..... 8
Texas-Oklahoma Allowables Reduced..... 11
New Code Interpretations..... 12
Hot Oil Regulations Revised..... 14

Personals 16
Production 39
Crude Prices 43
"Squeaks" 81

PRODUCTION ENGINEERING:

Unitization Proves Itself 19
Government Wells Surface Geology..... 23
Mechanics and Chemistry and Heaving Shale..... 27

PIPE LINE ENGINEERING:

Formulas for Designing Natural Gas Lines..... 31

FOREIGN TECHNOLOGY AND DEVELOPMENT..... 48

THE WEEK'S MARKETS AND STATISTICS..... 39

FIELD REPORTS 51

California 71
Oklahoma 52
Kansas 55
Texas 57
Louisiana 68
Michigan 72
Arkansas 70
Southeastern States 70
Rocky Mountain States... 70
Wildcat Drilling Reports.. 74

NEW EQUIPMENT FOR THE FIELD..... 81

SPECIALIZED OIL JOURNALS
Published by
THE GULF PUBLISHING COMPANY

BRANCH OFFICES

NEW YORK.....250 Park Ave.
PITTSBURGH.....Standard Life Bldg.
CHICAGO.....141 W. Jackson Blvd.
LOS ANGELES.....Haas Building
TULSA.....Hunt Bldg.
FORT WORTH.....W. T. Waggoner Bldg.
WASHINGTON.....Albee Bldg.

Member Audit Bureau of Circulations.

Published every Monday. Single Copies 15 cents. Subscription price: domestic and foreign $1.00 a year. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacture and distribution of oil field supplies.

Advertising rates on application.

7 GO-GETTERS

LOWEST COST *because they—* SERVE LONGER

The economy of Union Lines is what has sold them to Arthur Brewer. Mr. Brewer, contractor on this Lewis Production Company well, is using Union Lines in his operations. He has found them uniform, and durable—thus economical in the long run. Mr. Brewer is a go-getter, and the equipment he uses has to qualify under that description, too. Left to right the men are: Earnie Gillespie, Jarecki Mfg. Co; Arthur Brewer, contractor; H. S. Everett, Lewis Production Co.; J. M. Shackelford, driller; L. Bailey, tool dresser; J. A. Undercofler, Union Wire Rope Corp.

UNION WIRE ROPE CORPORATION

3 North Madison Ave., Tulsa, Okla.

Branch Office and Warehouse: Portland, Ore. Warehouse: Monahans, Tex. Factory: 21st and Manchester, Kansas City, Mo.

JARECKI MANUFACTURING CO., Mid-Continent and Eastern Oil Field Distributors—Stocks at All Stores

MARION MACHINE FOUNDRY & SUPPLY CO., Rocky Mountain Fields

SABALO TRANSPORTATION CO., (A Katz Organization) Stock at Tampico, Mexico

UNION WIRE LINES

The "ULTIMATE LOW COST WIRE ROPE"

The OIL WEEKLY. Issued weekly by the Gulf Publishing Co., 3301 Buffalo Drive, Houston, Texas. Subscription price $1.00 per year; 15 cents per copy. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879.

©C1B 235962

THE OIL WEEKLY

ENGINEERING « STATISTICS » THE WEEK'S NEWS

EDITORIAL STAFF

WARREN L. BAKER
Editor

J. KENT RIDLEY
Managing Editor

ASSOCIATE EDITORS

JACK LOGAN — BRAD MILLS
WM. V. GROSS

DISTRICT EDITORS

B. F. LINZ.....Washington
FLOYD SWINDELL.....Tulsa
H. H. KING.....Fort Worth
W. E. GREEN.....Los Angeles
EARL S. POST.....San Antonio
R. W. BYRAM.....Austin
CHAS. LEYENDECKER.....Houston

PUBLISHED BY
GULF PUBLISHING COMPANY
HOUSTON, TEXAS

R. L. DUDLEY, *President*
A. L. BURNS, *General Manager*
S. W. ROBINSON, *Editorial Director*

ADVERTISING STAFF

DICK SWINSKY.....New York
W. W. PIGUE.....Pittsburgh
T. W. NELSON.....Chicago
J. F. CARTER, JR.....Tulsa
W. E. GREEN.....Los Angeles
CHAS. WYATT.....Houston
WM. ATCHESON.....Houston

W. J. HUDSPETH
Circulation Manager

Contents » July 30, 1934

Volume 74 ◆ Number 7

THE CHANGING PANORAMA..... 5

NEWS OF THE WEEK:

The Next Five Months..... 6
Record Casing String Landed..... 8
Texas-Oklahoma Allowables Reduced..... 11
New Code Interpretations..... 12
Hot Oil Regulations Revised..... 14

Personals 16
Production 39
Crude Prices 43
"Squeaks" 81

PRODUCTION ENGINEERING:

Unitization Proves Itself 19
Government Wells Surface Geology..... 23
Mechanics and Chemistry and Heaving Shale..... 27

PIPE LINE ENGINEERING:

Formulas for Designing Natural Gas Lines..... 31

FOREIGN TECHNOLOGY AND DEVELOPMENT..... 48

THE WEEK'S MARKETS AND STATISTICS..... 39

FIELD REPORTS 51

California 71
Oklahoma 52
Kansas 55
Texas 57
Louisiana 68
Michigan 72
Arkansas 70
Southeastern States 70
Rocky Mountain States... 70
Wildcat Drilling Reports.. 74

NEW EQUIPMENT FOR THE FIELD..... 81

SPECIALIZED OIL JOURNALS
Published by
THE GULF PUBLISHING COMPANY

BRANCH OFFICES

NEW YORK.....250 Park Ave.
PITTSBURGH.....Standard Life Bldg.
CHICAGO.....141 W. Jackson Blvd.
LOS ANGELES.....Haas Building
TULSA.....Hunt Bldg.
FORT WORTH.....W. T. Waggoner Bldg.
WASHINGTON.....Albee Bldg.

Member Audit Bureau of Circulations.

Published every Monday. Single Copies 15 cents. Subscription price: domestic and foreign $1.00 a year. Entered as second-class mail matter December 23, 1916, at the post office at Houston, Texas, under act of March 3, 1879. Subscription restricted to those engaged in the producing and pipe line branches of the oil industry or the manufacture and distribution of oil field supplies.

Advertising rates on application.

THIS IS A CASE IN POINT. Wherever machine parts are lubricated by hand, the lubricant must stay in place in order to prevent mechanical failure.

For example, consider the lubrication of spring shackles for motor vehicles. The special Shell testing device for shackle lubricants demonstrates that specifications ordinarily employed in purchasing lubricants do not in themselves insure satisfactory performance in this kind of service.

Hence, to usual specifications for greases such as penetration, melting point, etc., Shell engineers add requirements of their own . . . that the grease must remain in the shackle bushings under the most severe conditions of this special test.

It is because of many such conclusive testing methods that Shell products are what they are . . . the finest that money can buy—and amply capable of standing up under the most rigorous service conditions.

Nine strategically located Shell Refineries: Arkansas City, Kan.; Coalinga, Cal.; Dominguez, Cal.; East Chicago, Ind.; Houston, Texas; Martinez, Cal.; Norco, La.; Wilmington, Cal.; Wood River, Ill.

SHELL

PETROLEUM PRODUCTS

JUL 31 1934

VOLUME 74, No. 7

JULY 30, 1934

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

Unfortunately the national government's figures on gasoline tax payments may reflect efficiency in collection instead of increased consumption of gasoline when the year's figures are higher. But some idea of the increase in consumption appears in the government's recently issued statistics on collections: $202,575,034 in 1934 as against $124,929,412 for the year ending June 30, 1933. The increase of $77,645,622 was made with half of the latter period having a rate one third lower than obtained throughout the earlier year. With no change in rate, taxes from lubricating oils increased $9,022,062 to $25,254,986.

As a federal tax collector, the oil industry collected these millions along with many more for the states, from the motorists. Adding the amounts paid in federal, state and local taxes, the industry turns in tax money many times over what it might hope to make as profit for itself.

Law Enforcement

All hot oil regulations have been revised in a sweeping order issued July 23 by Oil Administrator Harold L. Ickes. These new regulations include a number of extremely heavy penalities and other stipulations that are expected to be fundamental steps in obtaining efficient enforcement of the oil code, particularly in curbing the production of hot oil, which admittedly has been the weakest link in keeping crude output and consumptive demand balanced.

These steps are well and good and may go far toward stopping the hot oil producer, who, in many cases, has heretofore willingly taken his chances on receiving penalties so as to reap rich profits. But all the laws and regulations passed will be of no value unless enforced.

What the industry as a whole needs, now that the hot oil regulations have been materially strengthened, is enforcement to the last degree. If enforced the hot oil producer will soon cease his destructive practices. There has been too much talking before, now lets have action. Page 14

Unit Development

Unitization—in fact, cooperative development of various kinds—has been a subject of importance for several years. There are, of course, a great many practical difficulties still in the way of its wider acceptance, but undoubtedly, too, there remain considerable ignorance or prejudice on the subject.

Many obstacles in the path of its universal adoption have been overcome during the past several years. Today it is being wider practiced than heretofore, and in the future it probably will be used more commonly than now.

Admittedly, over-drilling has been the basis for many evils confronting the oil industry. Too many wells also means too much expense. Many districts have shown practical benefits of unit development. Curtailment of needless expenditures is one of the best means for achieving revenue profit. Page 19

The Oil Man's Calendar

AUGUST
24-27 *Drake Well Memorial Celebration, Titusville, Pennsylvania.*

SEPTEMBER
10-14 *American Chemical Society, Cleveland, Ohio.*
19-21 *National Petroleum Association, Atlantic City, New Jersey.*

OCTOBER
1-5 *National Safety Council and American Society of Safety Engineers, Cleveland, Ohio.*
12-13 *A. I. M. E. Petroleum Division, Tulsa, Oklahoma.*
16 *Kansas-Oklahoma Division, Mid-Continent Oil & Gas Association, Tulsa, Oklahoma.*
29 *American Gas Association, Atlantic City, New Jersey.*

NOVEMBER
12-15 *American Petroleum Institute, Dallas, Texas.*
American Association of Petroleum Geologists (Pacific Section), Los Angeles.

The Next Five Months

Latter half of year promises to equal or better the generally favorable first half. Producers have had best chance to make money, but improved gasoline markets offer hope that refining and marketing operations will become profitable. More effective balancing of crude and gasoline production with demand is in prospect, although oil control still faces serious difficulties.

JACK LOGAN
Associate Editor

WHAT are the petroleum industry's financial prospects for the latter half of 1934 and for the year as a whole?

The answer to that question is extremely difficult, of course, since it involves so many unknown quantities in the general economic picture as well in the oil industry itself.

When all is considered, however, it appears that the closing half of this year should prove as satisfactory as the generally profitable first half, if not better; and that the whole year should therefore represent some improvement over 1933, when latter half results were especially favorable, but inadequate in some instances to offset the heavy losses of the first half.

While oil company operations in the first half of 1934 as a whole were generally profitable, the results for the second quarter were not as good in many instances as in the first quarter, although the second quarter is normally better than the first, on account of larger gasoline consumption. The 1934 second quarter set-back was due chiefly to widespread gasoline price wars, brought on at least partially by encroachment of "hot" crude oil and "hot" gasoline upon the markets.

While the gasoline markets have been disturbed, crude oil prices have continued at relatively high levels, due apparently to the influence of the oil code. Financial results have, consequently, been relatively good for oil companies that are primarily producers and for integrated companies with large crude production. The results have been unsatisfactory generally, on the other hand, for companies engaged only in refining or in marketing, and integrated companies that have had to buy substantial proportions of their crude oil requirements at the relatively high prices in effect have not fared as well as concerns better rounded out.

The second half of the year has opened more auspiciously, with the gasoline markets stronger, and with demand for petroleum products continuing near all-time "highs." The improved gasoline market has resulted from stabilization plans, inaugurated lately on the Pacific Coast and in East Texas; involving purchases of surplus gasoline by large companies from independent refiners, and obligation of the latter to process in the future only legally produced crude.

Uncertainties Along With Improvement

Although the oil industry's prospects have been somewhat brightened by the recent gasoline market improvement, the outlook is still clouded by ominous uncertainties and difficulties centering largely around control of supply of gasoline and crude oil.

While the Pacific Coast and East Texas plans have stimulated gasoline prices, there are indications that the programs may not prove wholly successful. In California some service stations and a few refineries are selling motor fuel at prices under those fixed in the marketing agreement. In East Texas the stabilization plan has taken considerable surplus gasoline off the market, but "hot" oil is still being produced and refined into "hot" gasoline in large volume. Some of the East Texas refiners have declined to participate in the stabilization plan. Some are charged with having violated their agreements to run only legal oil and to observe gasoline production quotas allocated to plants by the oil code administration. The situation is further complicated, meanwhile, by construction of additional refineries, which were of course not parties to the marketing agreements. A recent report showed six refineries under construction in the area, 30 plants shut down, and 52 in operation, with aggregate crude runs of 479,982 barrels for the week covered by the report.

Better Crude Control Sought

If threatened breakdown of the gasoline marketing plans should materialize, the industry's hope for stabilization would fall back, as before, directly on regulation of crude production. Such regulation continues generally successful, but partially thwarted by substantial "hot" oil running in East Texas.

Various forces have promised to reduce East Texas "hot" oil, but such production has never yet been stopped, and it is but natural to look with skepticism upon even the most promising anti-"hot" oil measures.

"Hot" Oil Regulations Revised

The oil code administration has high hopes, however, for more effective control of crude production under new regulations promulgated last week, superseding regulations issued at the outset of federal government supervision of the oil industry. The new regulations will require more detailed information in reports from producers, refiners, shippers, and carriers, and will place reclamation plants under surveillance. Some of the latter have been frequently charged with defeating the laws by recovering oil deliberately spilled or wasted.

More important perhaps than the new regulations themselves will be the use of provisions of the new criminal code law in enforcing the regulations and the oil code. That new law permits fines up to $10,000 and imprisonment up to 10 years for making false statements with respect to any matter falling under the jurisdiction of any governmental agency. Forms to be used under the revised regulations bear warning that false certification can be punished by those penalities as well as by the NIRA penalities of fines up to $500 and imprisonment up to six months. The new penalties are expected to change the attitude of some violators who have felt in the past that the large profits available were worth the risks involved.

Other Control Measures

While the new oil regulations and the provisions of the criminal code law promise more effective control, governmental agencies had already been reinforced greatly by the new tenth-cent per barrel federal taxes on crude oil at the well and gasoline at the refinery. For if taxes are paid on "hot" oil or "hot" gasoline, the oil administration can get the violator. If they are not paid, the revenue department can prosecute. That is a tough situation for the "hot" oil operator, and has him worried.

Another measure aimed at aiding oil stabilization is a plan announced last week for combating retail gasoline price wars. The oil administration authorized the Planning and Coordination Committee to establish local committees as needed to deal with local price wars and to negotiate settlements in the areas as the wars arise.

Oil control scored a further victory July 21 when the new Texas refinery control law was upheld in a state court of appeals. The court affirmed a lower court ruling by which an East Texas refiner was denied an injunction to restrain the Texas Railroad Commission from enforcing the refinery law.

While efforts have gone forward toward strengthening governmental control of oil, the objectives aimed at have been made more difficult. For August the oil administration reduced gasoline production quotas of refineries, with the hope of cutting down surplus gasoline stocks. Largely because of the lower refining allowables, the nation's allowable crude production was also reduced for August as compared with July.

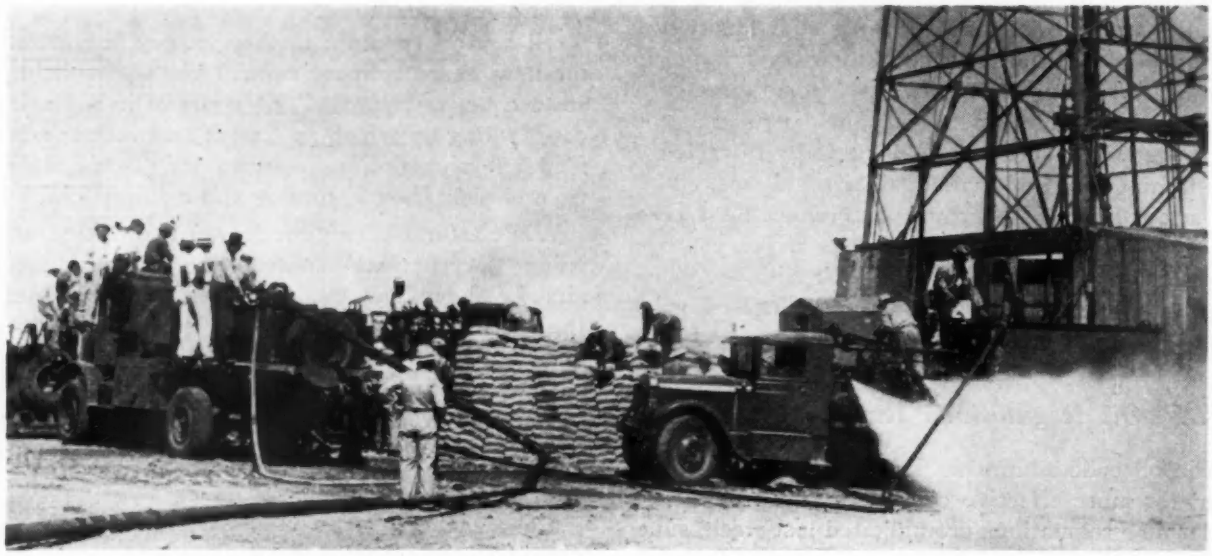
Court Fights Still Ahead

Considering all the offensives by federal and state governments along the oil front, it seems that the net of control is drawing in closer and closer around those who seek to evade supervision.

Those familiar with the great difficulties of oil law enforcement in East Texas do not, however, look for any easy victory for the authorities as regards that area, principal scene of "hot" oil activities. The East Texas field is nearly four years old, and it has never yet been freed of "hot" oil. Although impending enforcement activities promise to bear fruit, illegal oil is still being produced there at the rate of about 75,000 barrels daily. Only a series of convictions and the assessment of severe penalties can be expected to materially reduce violations, it appears.

Such convictions and penalties may prove to be not so easy of achievement, moreover. For when and if the authorities begin a more determined drive against violations, as they apparently propose to do in the future, the result is almost certain to be a series of court fights to test the officials' powers in all their moves. The oil administration's lately promulgated regulations are in danger, for instance, of being carried into the courts in pleas for injunctions against enforcement agents.

Nor is the oil code itself a bedrock foundation for oil control. In fact, the code suffered a serious blow July 21, when the United States Fifth Circuit Court of Appeals at New Orleans ordered a stay of its judgment against Panama Refining Company and other East Texas oil concerns pending review of their code-attack case in the United States Supreme Court. The high court will not sit again until fall. The stay suspends the appeals court judgment upholding oil control under the NIRA; and it thus gives force again to the injunction obtained by plaintiffs in district court, restraining federal oil agents from interfering with plaintiffs' operations.



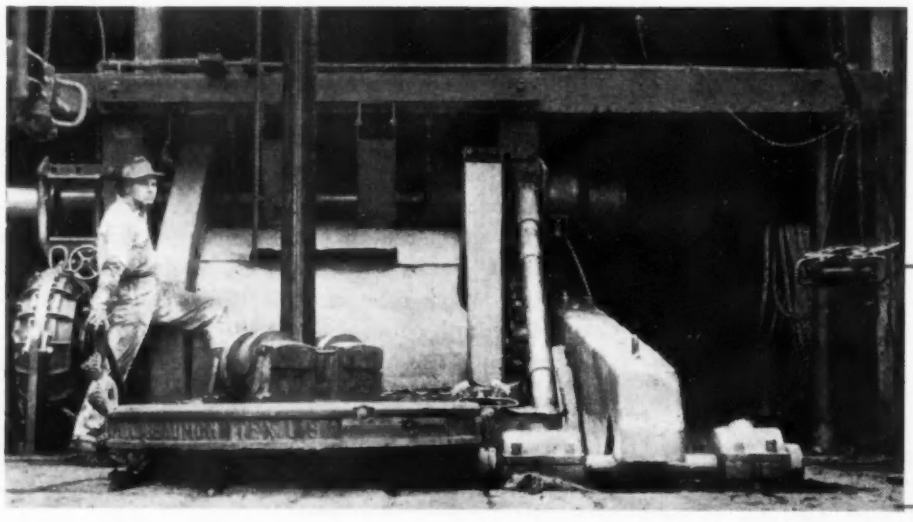
One Thousand Sacks of Cement Went Into McElroy 103. Time, 71 Minutes.

Record Length String of Casing *Is Landed and Cemented* With Ease

ADDED laurels for the engineering skill of the production branch of the oil industry were won early last week when nearly two miles of 7⅝-inch steel casing was inserted and cemented successfully in Gulf Production Company's J. T. McElroy 103, West Texas contender for record depth production honors, within an elapsed period of 19 hours. Rated as the second longest string of pipe used in a drilled hole, and an unchallenged record considering its size, the feat was accomplished without mishap, although work was suspended nearly one hour while running the casing because of heavy rainfall. The casing was cemented at 10,301 feet to test porous gray siliceous limestone showing oil and gas saturation from 10,564 feet to the bottom of the hole at 10,630 feet.

H. H. KING
District Editor

This prospective deep producer is situated near the Upton-Crane County line and near the center of a large leasehold owned by Gulf Production Company, with an extensive area already productive in the dolomite lime near the 2900-foot level. McElroy 103 was drilled to try for production in the Ordovician lime, which has in past years proved highly prolific from the 8500 to 9000-foot level in the Big Lake field. The saturated lime horizon encountered by McElroy 103 has not been definitely identified through paleontological analysis as



Rotary and Draw Works at McElroy 103.

Ordovician, although it is pre-Pennsylvanian in age. Plans are to start drilling out cement plugs and undertake a swabbing test through tubing during the fore part of the present week.

Comparative ease and speed attained in lowering the pipe and cementing the long string in McElroy 103 was made possible by suitable equipment being available to perform under such conditions, plus an almost perfectly conditioned hole. The company's engineers have been making an extensive study of the mechanics of deep well drilling to be prepared to set a precedent by completing a commercial producer below 10,000 feet. This research activity also guided the company in selecting the type of equipment utilized in drilling and casing the hole to its present depth.

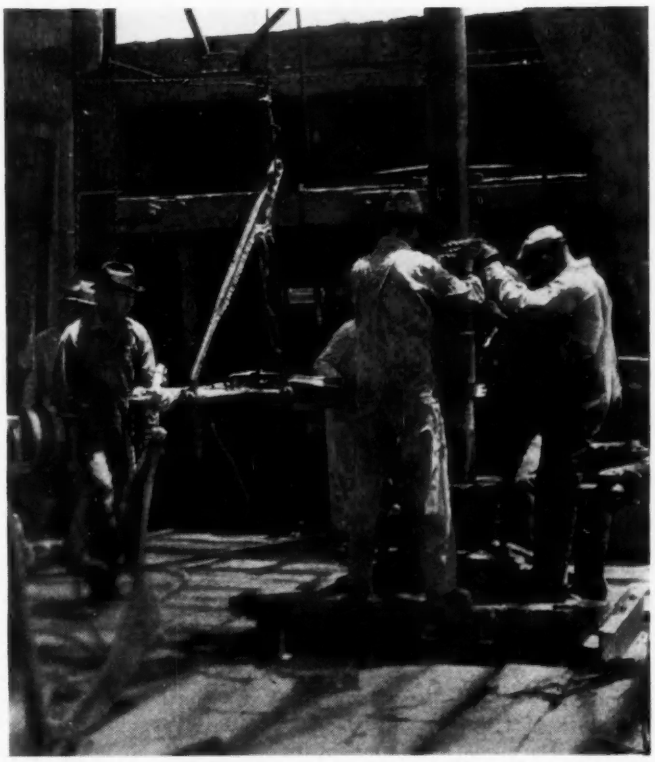
McElroy 103 was carrying 6613 feet of open hole when operations were halted to run pipe and make production test. The last string consisted of 4017 feet of 10¾-inch casing that was cemented with 1000 sacks of cement. The hole has been surveyed at regular intervals to detect any deviation from vertical, and at 10,000 feet it was found to be only about one degree off.

Pending the delivery of the 7⅝-inch pipe, an electrical instrument that serves to measure the resistivity and porosity of the uncased hole was lowered through the column of mud to the bottom. It is reported that results obtained by this survey checked in a general way with the recognized geological formations logged while drilling and coring the test. An exceptionally accurate log was prepared by the geologists stationed on the well during the entire period that work was in progress, as the core barrel was used extensively. A 6⅞-inch core barrel, recovering two-inch diameter cores, was used when the hole was reduced to 9⅞-inch diameter below the 10¾-inch casing seat.

Anticipating a high bottom-hole temperature, Gulf Production Company made a series of readings that averaged 149 degrees Fahrenheit. This information was needed to safeguard against premature hardening of the cement while being pumped behind the casing.

Grade "D," 34-pound weight, A.P.I. specification pipe was started in the mud-filled hole at noon Saturday, July 21. A standard type of guide shoe was placed on the bottom joint. Two float collars were inserted between the first and second joints and between the second and third joints of 30-foot length pipe. These float collars are screwed into the casing to take the place of regular casing collars, and contain a valve device that allows free movement of fluid downward, while a ball and seat arrangement blocks the return of the fluid.

The four complete rotary drilling crews imported by the company from the Gulf Coast to drill McElroy 103 also performed the task of running the casing. Working in short shifts, these men floated in 5582 feet of the pipe before mud was pumped in to lessen the hazard of a collapse.



Running the record string of pipe in McElroy 103. (Photo Courtesy Don Garrison, Mission Manufacturing Company.)

Special care was taken in preparing the mud mixture, which was maintained at an average weight of 10 pounds per gallon, with a viscosity of 5½ S.U.V. Davis Mountain clay formed the base material, while several popular brands of factory-made weighting material and caustic soda were added.

The battery of mud pumps was stepped up to 750 pounds pressure in getting returns on the mud-filled casing at the 5582-foot level. The remainder of the pipe was floated into the hole without the use of additional mud. However, precaution was taken to ascertain if the float valves were functioning properly before landing the pipe by breaking circulation of the mud stream.

Three of the latest types of cementing outfits were stationed at the well, but only two were pressed into service. The two

Drilling crew McElroy 103, back row, reading from left to right, Walter J. Walsh, Foreman; Henry D. Holliman, Helper; R. C. Randolph, Driller; V. F. Tilley, Helper; B. C. Martin, Geologist; G. B. Buckley, Derrick man; A. H. Harper, Helper; C. D. Aycock, Driller; H. H. Head, Fireman; Thomas E. Patrick, Derrick man; Mc Chamblee, Derrick man; A. G. Dement, Helper; O. Evans, Helper; J. W. McCabe, Fireman; R. W. Knight, Derrick man; Geo. McElveen, Driller; J. M. Faulk, Helper; J. C. Neal, Helper; Frank Hajek, Helper; Joe Bailey, Fireman; H. H. Moore, Driller; Raymond Know, Fireman.

used were steam pump types, while the standby unit was of motor driven design. In view of the apparent absence of prolific water horizons, only 1000 sacks of cement was deemed necessary. The cement mixture weighed approximately 15 pounds per gallon, and was introduced into the casing at an average temperature of 60 degrees. Eight tons of ice were consumed in lowering the temperature of the water used with the cement to about 40 degrees Fahrenheit prior to mixing. This sub-normal temperature of the mixed cement served to counteract the high temperature in the bottom of the hole.

Approximately 26 minutes was required to pump the cement into the hole, and the task was pronounced complete within one hour and 11 minutes. Circulation was established at the remarkably low pressure of 750 pounds. It immediately dropped to 500 pounds and then increased to 750 pounds as the cement equalized and then jumped to 1100 pounds as the cement landed.

The weight indicator used while running this record string of pipe, which consisted of 342 joints, weighing 350,234 pounds, exclusive of the collars, registered a maximum load of 286,390 pounds while the cementing contractor was pumping cement behind the casing. A standard type of steel derrick having a load capacity of 537,000 pounds was not taxed. The derrick has a height of 136 feet, with a 26-foot base.

Special precautions were taken by the Gulf Company to assure no mishaps during the running of this heavy string of casing. A 200-ton capacity six-sheave block mounted upon 7¼-inch pins was installed along with a companion traveling block. The eleven wire lines consisted of stretch proof 1⅛-inch diameter material. A 200-ton capacity hook was put into service also.

A slip type of elevator was used in handling the casing. The casing string was lifted about two feet in order to pull the slips out of the spider, as each joint was lowered. A 12 x 12 twin drilling engine, operating on steam pressure of 300 pounds, generated by four 125-horsepower boilers, was employed to lift and lower the pipe.

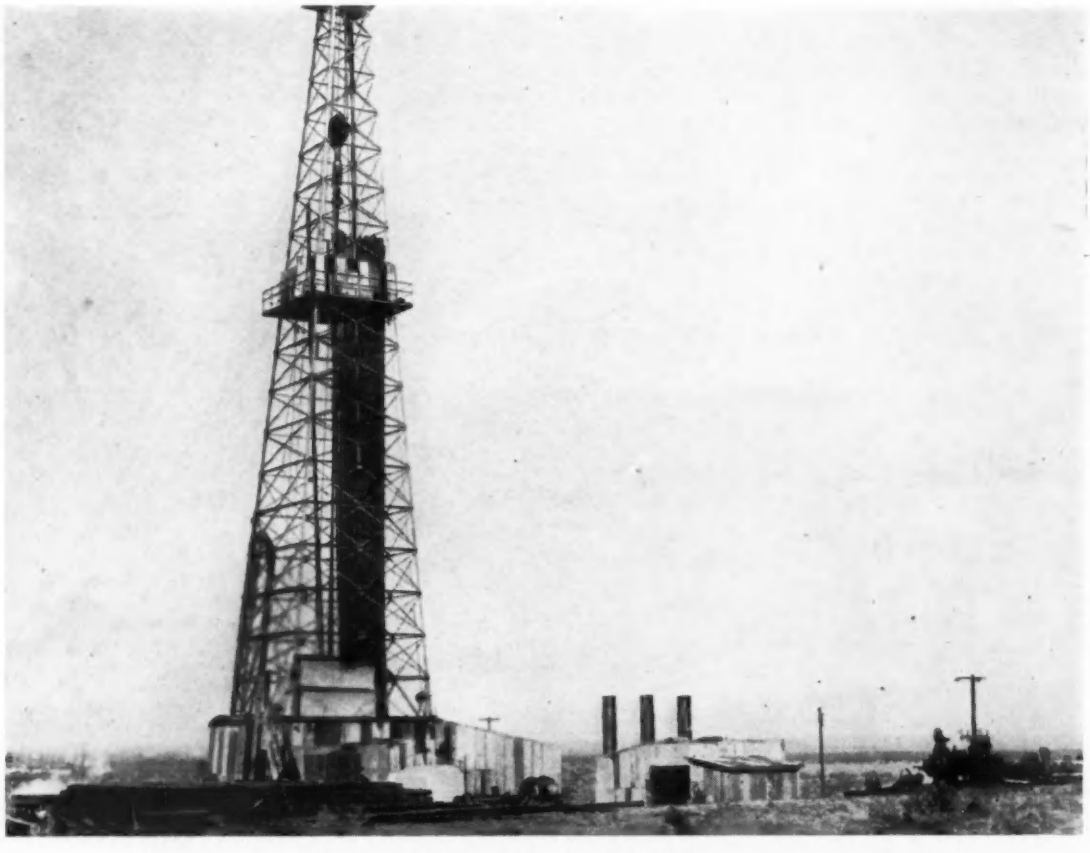
As a safety measure the derrick floor was stripped of the rotary table, and a special steel foundation was built up for the casing spider.

Among the various precautions taken by officials of Gulf Production Company against possible mishaps in running the pipe was to assign an engineer to observe the effect the heavy casing load had on the derrick. A transit was stationed about 300 yards from the derrick and directed on a special marker attached to the crown block. The maximum sag detected was only 9/16 of an inch.

Company officials are not relying on the unidentified saturated lime formation at 10,630 feet precluding the necessity of deeper drilling. A new 11,500-foot string of 3½-inch drill pipe has been stacked on the ground to take the place of the 4½-inch drill stem so as to be prepared to resume drilling and coring should production in commercial quantities be lacking at the present depth. A specially designed high pressure Christmas-tree is being assembled for installation should such equipment be needed.

Plans are to run 2½-inch tubing, then wash the casing clean of the rotary mud with water. Swabbing equipment has also been moved in.

Considerable credit goes to the Gulf engineers for the pains they took in conditioning the hole for this record performance. It was this preliminary work that played an important part in performing this noteworthy achievement with so much ease. Joe Russell from the company's Houston office; F. J. Adams, M. O. Rise and David Fuqua from Gulf Production Company's Fort Worth office, were present during the job.



J. T. McElroy 103, with 8700 feet of 4-inch drill pipe standing in derrick.

Texas *Production Allowable Again* Reduced For August

Austin, Texas.—The Texas Railroad Commission issued a new statewide proration order last Thursday reducing the allowable for the state by approximately 60,000 barrels. The order, which is effective on August 1 and terminates on September 1, provides for the production of 979,475 barrels per day, based on an estimated allowable for East Texas of 400,000 barrels.

The new allowable will be 21,825 barrels below the allocation of 1,001,300 barrels per day recommended by Oil Administrator Harold L. Ickes as the probable consumer demand for Texas during August.

Southwest Texas shared in the cut to the extent of 798 barrels, all which was taken from marginal fields unable to make the allowables assigned to them under the orders of July 1.

West Texas, the Gulf Coast and East Central Texas received increases totaling 11,495 barrels per day, which was distributed among 15 fields in these districts.

East Texas

The commission fixed the allowable for East Texas at 5 percent of the hourly potential. At the statewide hearing on July 23, Gordon Griffin, chief petroleum engineer for the commission, announced that new potential tests completed on July 20, would reduce the total hourly potential by 20 or 25 percent.

He pointed out that this would mean a similar cut in the allowable under the current allowance of 4.5 percent of the hourly potential.

Griffin estimated that an allowance of 5 percent of the hourly potential would result in a total field allowable of 400,000 barrels per day, and recommended to the commission that such an order be issued.

As the best wells in the field made only 990 barrels per hour during the recent tests, an allowance of 49.65 barrels per day will be the largest allocation to any well in the field.

Griffin said that he expected many more wells would be included in the marginal class, which receive the minimum allowance of 20 barrels per day.

No calculations of the potential resulting from the new tests had been completed when the order was released, so that no exact figure on the new allowable was available.

The Cayuga field, in Anderson County, received an increase of 1500 barrels per day. This resulted in a total field allowable of 3000 barrels per day. On July 12 there were 15 producing wells in the field with six operations in progress. Operators asked for an allowable of 200 barrels per well. The new order would provide an allowable of 143 barrels per well when the 21 wells are producing.

Southwest Texas

There were 13 fields in Southwest Texas which received cuts and two which obtained increases. The increase totaled 15 barrels for both fields. Most of the cuts were reductions in marginal fields unable to make the allowables previously assigned.

The most surprising fact concerning the changes in Southwest Texas was the failure of the commission to make any adjustments either in the allowable or the method of allocation in the two Government Wells fields. At the hearing last Monday Commission Engineer Gordon Griffin recommended that the top per-well allowable for these two fields be reduced from 60 to 35 barrels per day, in order to permit pressures to equalize and conserve reservoir energy, which he contended was being dissipated too rapidly. It is possible that the commission plans to make some adjustments in this field by a separate order issued later.

When these fields were first placed on allowable based on bottom-hole pressure alone, the North Government Wells al-

(*Continued on page 46*)

Commission May Change East Texas Percentage

Austin, Texas.—After issuing its orders for a five percent allowable production of the hourly potential on East Texas wells, the Texas Railroad Commission Friday was considering changing it to four percent.

However, it had not determined what proportion of the hourly potential would be allowed when offices of the commission closed Friday evening. The engineering division in East Texas was still working on the potential figures. As soon as this information is available they will be able to determine just what figure to put in the order for East Texas that will allow the production of 400,000 barrels per day.

Commissioner Lon Smith said that the order would probably be withheld till Monday, as the Capitol will be closed on Saturday for the election.

Oklahoma *Production Allowable For August* Cut Three Percent

Oklahoma City.—In a conference held late Thursday, July 26, members of the Oklahoma Corporation Commision agreed to a horizontal cut of three percent in all prorated pools to bring the state within its 480,100 barrel federal allocation for August and probably September. At conclusion of the hearing it was announced that a hearing to determine September allowables might be held on August 30 depending upon conditions obtained during that month.

The general cut of three percent will apply to all Class B and Class C pools with minor adjustments. The Naval Reserve and South Burbank pools of Osage County, which heretofore have been voluntarily prorated to 200 barrels per well per day will be cut to 194 barrels.

Upon recommendation of Umpire W. J. Armstrong it was believed the commission would adopt a rule permitting wildcat wells to test for a 30-day period to a maximum of 15,000 barrels. After which they would be cut to 50 barrels per day. Wells which could not produce up to the 500 barrels per day average would be permitted to produce wide open during the 30-day period.

H. J. Struth, technical advisor to the Petroleum Administrative Board, testified that actual market demand for Oklahoma crude during August is estimated at 526,000 barrels daily or a total of 16,300,000 barrels for the month. It was estimated that 1,210,000 barrels of oil had been added to storage through overproducing the federal allowable. This amount was deducted from estimated market demand in arriving at August allowable.

New Code *Interpretations* *Solve* Several Problems

Washington, D. C., July 25.—Interpretations and instruction for actions under Sections 1, 5 and 7 of Article II and Section 8 of Article III of the oil code, dealing with drilling practices, were this week made public following their approval July 19 by Oil Administrator Harold L. Ickes.

The interpretations are expected to solve a number of questions which have been propounded as to the effect of and practice to be followed under the sections covered and are as follows:

Article II, Sections 1 and 7: On December 21, 1933, Article II, Section 1 of the code was amended to provide certain maximum hours for labor on all drilling operations. These maximum hours are effective from and after December 21, 1933. Under Article II, Section 7, employers are required to fix such standards of labor for their employes as will comply with the requirements of Article II, Section 1, as amended. Any device whereby an employer attempts to evade the maximum hours set is in violation of the code.

Article II, Section 1: The code provides that no employe of drilling operators shall work more than a 36-hour per week average in any 26 consecutive calendar weeks. This means that subject to the other restrictions provided for, an employe may work a total of 936 hours in such a period. In order to avoid confusion and to render this provision workable, the regional or state drilling practices committees shall, within 30 days from the date interpretations are approved by the petroleum administrator, set up two 26-consecutive-week periods so as to divide the working season of their areas as nearly as practicable so that, taking into consideration weather and operating conditions, one half of the working season will be placed in each period. The 936 hour maximum provided for shall be computed with strict reference to these two periods. Any employer who knowingly requires or permits any employe to work, who has already worked the maximum allowable hours during the period in question either for him or for any other employer, shall be deemed to have violated this provision of the code, and all employers shall exercise due diligence to acquire notice to the end that the objectives of the code may be obtained.

No employe shall work more than 48 hours in any seven-day period, nor more than eight hours in any one day. Therefore, if any employe works eight hours per day he must lay off one day in each seven day period. Where continuous operations are necessary and conditions are such as to render the "staggering of crews" as not practical, then employes may work only six hours a day or a total of 42 hours in the seven-day period. On either basis the employe works, all paid hours accumulate toward the maximum of 936 hours for the period. If and when this maximum is reached, then employe must "lay-off" until the end of that period.

Eight hours per day is the limit permitted by the code. In circumstances where relief is impracticable this limit may be exceeded provided that the employe works not more than 16 hours on any consecutive two days.

Any request for an exception from the hourly provisions of the code must be addressed to the Planning and Coordination Committee for recommendation to the Administrator under Article 1, Section 4 (a.)

Article III, Section 8 (b): All concessions of any character whatsoever are forbidden by this sub-section. This includes the furnishing of materials and services not customary in the particular area, in determining the fair economic cost under sub-section (f) of this section the committee on drilling practices shall concurrently specify the materials and services which shall go to make up this cost, and shall establish the furnishing of such materials and services as "field practice" for the area in question. The committee on drilling practices shall promulgate a form specifying the materials and services which shall go to make up the fair economic cost of operation as determined in the particular area. Any other materials or services rendered by the contractor must be furnished at a price commensurate with their value.

(d) The remuneration for any contract shall be specified in cash or the equivalent of cash. This section does not prohibit the receipt of oil payments or interests in leases, etc., provided that such interests, oil payments, etc., are accepted by the contractor at not more than the actual cash value at the time of entering into the contract. This section prohibits the acceptance of products of petroleum in payment for the drilling of a well or otherwise, when such products are not necessary for the actual drilling or other uses pertinent thereto, regardless of their cash value.

(e) This section relates only to contracts between the contractor and his employes.

(f) When such fair economic cost of operation has been determined and approved in any field, zone or area, as provided in Article III, Section 8, Sub-section (f), such cost shall be applicable to all wells, the actual drilling of which has not been begun in good faith prior to such determination and approval even though the contract for such wells was made prior to such determination and approval. The fair economic cost of operation shall be inclusive of all the items set forth in this section, that is, overhead, administration, obsolescence, depreciation, well and operating costs, and a reasonable allowance for hazard. The respective regional committees on drilling practices or sub-committees in determining such fair economic costs shall make every effort to obtain within a reasonable time adequate statistical data showing the actual cost of operations in the particular area. If such actual costs cannot be ascertained this section does not preclude the committee from estimating such cost on the basis of experience in the general area. The regional committee on drilling practices shall, however, in no instance approve a base cost for any area before an adequate public hearing has been held at which both producers and contractors have been given full opportunity to submit their cost figures. Any determinations of cost reached pursuant to this section shall become effective immediately upon receiving approval of the regional committee on drilling practices. The committee may, however, in a case in which it does not believe that the data is sufficient to justify a determination, either call for additional data or submit the entire record of the proceedings to the Planning and Coordination Committee, together with its recommendations concerning the proper cost. In such a case the costs shall become effective when approved by the Planning and Coordination Committee.

The provisions requiring the determination of the fair economic costs of operation for any field, zone or area, does not prevent the regional committee on drilling practices from grouping producing areas which have substantially similar drilling conditions.

Under the provisions of Article II, Section 5, each producer must insert in all contracts entered into with a drilling contractor a provision whereby the contractor agrees that his employes or those of any sub-contractor shall receive the rates designated by the code for each respective class of work, and shall not work in excess of the schedule of hours in the code.

If that requistion reads

you can depend upon the

good judgement of your field men!

BAKER BAKWIK DRILL PIPE FLOAT

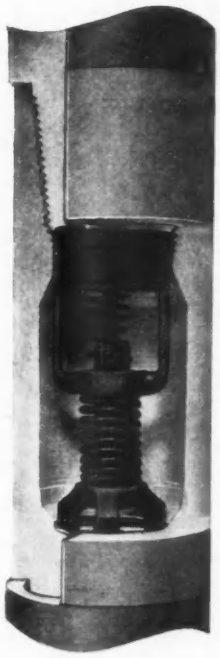
MODERN OIL C

No. 2767

Requisition

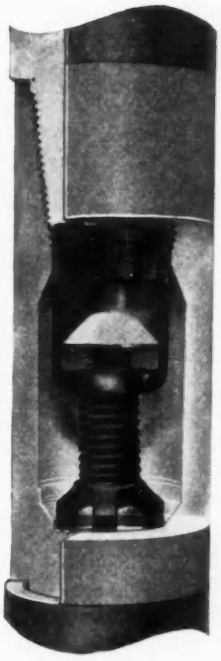
Kindly order for Well #2

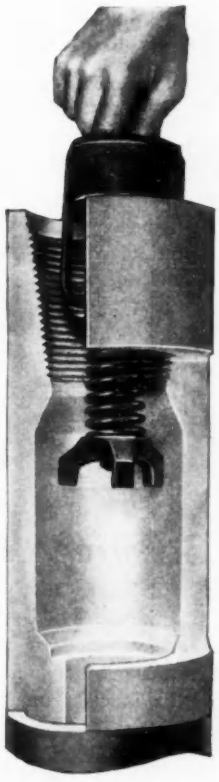
1	4½" A.P.I. Baker Bakwik Drill Pipe Float
3	4½" A.P.I. Extra Bakwik Valve Assemblies



They *know* that an expenditure of $50 to $80 will provide them with a safe, trouble-proof long wearing drill pipe float which will . . .

- reduce the weight on derrick and rig equipment
- lengthen the life of wire lines and brake bands
- minimize wet pulling jobs
- prevent plugging of the bit
- eliminate necessity for a stop-cock
- permit reverse circulation by merely unseating the back-pressure valve
- minimize danger in case of a parted drilling string
- and, of course, safely "float-in" the longest, heaviest drilling string





While running-in, the valve provides a leak-proof seal against back-pressure. The valve assembly is held in position by the tool joint pin. The Bakwik design eliminates all threads. (See above.)

When the pumps are started, the valve is unseated. The large, stream-lined passageways do not restrict circulation. Abrasion-resisting materials insure long life and operating economy. (At right.)

When surveying instruments or go-devils are to be run, the entire valve assembly is easily lifted out by hand. The length of the drilling string is never changed — no chance to make errors in measurements.

Complete information is in the Baker Catalog. Is your copy handy, or would you like to have us send you the 1934 Edition?

NRA MEMBER WE DO OUR PART

BAKER OIL TOOLS, INC.

SEE OUR DESCRIPTIONS IN THE COMPOSITE CATALOG

P. O. BOX 609, HUNTINGTON PARK, CALIFORNIA

COALINGA • TAFT • HOUSTON • OKLAHOMA CITY • TULSA • NEW YORK

"Hot" Oil Regulations Revised

Heavier penalties and other stipulations imposed in effort to gain stricter control

Washington, D. C.—Complete revision of the "hot" oil regulations of the oil administration, superseding those issued a year ago and paving the way for enforcement of the new oil taxes, is provided for in sweeping orders issued July 23 by Oil Administrator Harold L. Ickes upon recommendations of the division of investigations and the Petroleum Administrative Board.

The new regulations, it was declared by the administrator, comprise "one of the fundamental steps we are taking for restoration of the industry and wise utilization of our oil resources in reshaping our program for efficient enforcement. They will meet weaknesses which have appeared in the development of our plans under the previous regulations, and will materially strengthen our weapons for going after the hot oil operator and curbing his destructive policies."

Producers, refiners, shippers and carriers will be required to make reports on oil they handle, as in the past, but in more detail, and so-called reclamation plants are included within the group required to make such reports as a result of reports to the division of investigations that in some instances oil is being deliberately spilled or wasted so that such plants may recover and process it without having to pay the penalties provided for illegal handling.

Particular attention is to be paid to operators of all classes in Texas, and the official forms for reports from that state are to bear a warning that false certification can be punished under the Criminal Code. The singling out of Texas in this way, it was explained, is a result of the feeling of some operators in the past that the large profits from handling illegal oil were worth the risk of the penalty involved.

Application of the Criminal Code provisions to the oil industry is made possible by action of Congress just before adjourning in permitting the assessment of a fine of up to $10,000 or imprisonment for as long as ten years for making false statements with respect to any matter falling under the jurisdiction of any governmental agency, in addition to the penalty of $500 fine or six months imprisonment provided in the industrial recovery act.

The new regulations were worked out by the various branches of the oil administration with the assistance of John Kilgore, chief counsel of Texas Petroleum Council.

As explained by the administrator, every producer and manufacturer is required to gauge accurately the amount of petroleum or petroleum products handled and not use any device to prevent such measurement, with a view to eliminating the practice of using bypasses to facilitate the unseen drawing off of oil.

The records of all persons dealing with oil and its products must be adequate and exact, showing details concerning the origin and history of the oil or products handled.

Carriers are made liable to penalties if they accept shipments which are not accurately billed.

All persons engaged in producing or handling oil are required to permit agents of the Interior Department to have free access to their books, inspect their wells, pipe lines, tanks, plants and all equipment, instead of merely permitting access to books as in the past.

Every producer in the East Texas field is to be required to file with the division of investigations a chart accurately showing the location of every well on his property and all outlets from it, drawn to scale.

The regulations, in full, are as follows:

Will Establish *Local Gasoline* Price War Committees

Washington, D. C.—As a major step in the general program to restore and stabilize the petroleum industry and to protect the independent, the oil administration today announced that the Planning and Coordination Committee had been authorized to establish local committees as needed to deal with local gasoline price wars and to negotiate settlements in the areas as the price wars arose.

In making public the plan, the oil administration called attention to the disastrous effects of retail price wars. They not only cause an excessive waste of oil and gasoline reserves, but they result in employes being worked long hours and their pay reduced to gain back some of the money lost by price cutting. In addition, large surpluses are piled up in the wholesale market and distributors are forced to sell for less than cost in efforts to unload heavy supplies at any price at which a buyer can be found.

Price wars are particularly disastrous to independents, both the wholesaler and retailer, who do not have the financial strength to stand the heavy losses suffered and may be bankrupted. This alone opens the way to monopoly because the larger companies have the financial reserves enabling them to take their losses and survive.

This policy for settling ruinous local price wars, which the oil administration has had under consideration for some time, also was recommended by the Darrow Board of Review in its report on the oil code. The plan stipulates that the settlements may be reviewed by the oil administrator and that they shall not in any way encourage the creation of a monopoly.

Russia to Try Again For Chinese Business

Trade Commissioner A. Viola Smith of Shanghai, writes that consumer reaction to the recent increase of eleven Chinese cents in gasoline in China has been unfavorable and that Russian gasoline is selling somewhat below that of major companies.

Incidentally, the commissioner further states that it is rumored that Russian oil interests expect to reenter the lubricating oil market in the near future on a large scale, at prices said to be lower than prevailing last year, when for a time they were active in this field.

Text of New Federal Production Regulations

ORDER

Under the

NATIONAL INDUSTRIAL RECOVERY ACT

By virtue of and pursuant to the authority vested in me by Sections 9 (c) and 10 (a) of Title I of the Act of Congress entitled "The National Industrial Recovery Act" approved June 16, 1933 (48 Stat. 195) and the executive orders of the President of the United States No. 6199 (July 11, 1933) and No. 6204 (July 14, 1933), issued pursuant to such legislation, the regulations and amendments thereto promulgated by me on July 15, 1933, July 25, 1933, August 2, 1933, August 21, 1933, April 6, 1934, and May 21, 1934, pursuant to said authority are hereby amended by substituting therefore the following regulations in so far as future transactions thereby or hereby regulated are concerned:

REGULATIONS

I.

Under the terms of the aforesaid act and orders, petroleum or any product thereof is in interstate and foreign commerce (1) when it is in the course of shipment or transportation by rail, pipe line, water, truck, or any other means of conveyance from any State, Territory or District of the United States or the District of Columbia, or to any other State, Territory or District of the United States, or to the District of Columbia, or to a foreign country, or (2) when it is in any quantity or in any manner commingled with petroleum or the products thereof some part of which is in the course of such shipment or transportation, regardless of how such commingling occurs during the various processes of shipment or refining. Excess production of petroleum under said act and orders includes petroleum produced in excess of proration quotas, oil-gas ratio requirements or any other law or valid rule or regulation which limits, directly or indirectly, the amount of production of petroleum or the products thereof.

II.

Because of the interrelation of interstate and intrastate commerce in petroleum and the products thereof and the direct effect upon interstate and foreign commerce of petroleum and the products thereof moving in intrastate commerce, it is essential for the proper enforcement of the provisions of Section 9 (c) of the National Industrial Recovery Act (48 Stat. 195) and the orders and regulations issued thereunder, that records be kept and reports be furnished the Division of Investigations of the Department of the Interior fully covering such information as respects producing, refining, reclaiming, shipping, storing, transporting, buying and selling, or otherwise dealing in or handling petroleum or petroleum products as is hereinafter required, regardless of whether such transactions are in interstate or foreign commerce or in intrastate commerce.

III.

DEFINITIONS

When used in these Regulations,

1. The term "person" shall include natural persons, partnerships, associations, trusts, estates, trustees in bankruptcy, receivers and corporations.

2. The term "producer" shall include every person having any part in the control or management of the operations by which petroleum is produced from any property. Every person in possession of crude petroleum who refuses to identify the prior owner thereof, from whom he acquired the same, shall be deemed the producer of such petroleum within the meaning of these Regulations.

3. The term "refiner" shall include every person who has any part in the control or management of any operation by which the physical or chemical characteristics of crude petroleum or petroleum products are changed, but exclusive of the operations of passing crude petroleum through separators to remove gas, placing crude petroleum in settling tanks to remove basic sediment and water, dehydrating it, and generally cleansing and purifying crude petroleum. Within the term shall be included every person who blends crude petroleum with any product of crude petroleum.

4. The term "reclamation plant" shall include every plant operated in the process of reclaiming, treating or washing waste petroleum, wash oil, pit oil, fugitive oil, basic sediment or tank bottoms.

5. The term "barrel of crude petroleum" means each 42 United States gallons of crude petroleum with an adjustment for not more than 2 percent of basic sediment, water or other impurities, and assuming a temperature of 60 degrees Fahrenheit, and the term "barrel" as used otherwise in these Regulations shall mean each 42 United States gallons of the article referred to.

6. The term "transporting agency" shall include railroads, pipe lines, gathering systems, tankers, barges, trucks or any other means of conveyance which shall be used for transporting petroleum or the products thereof.

7. The term "petroleum" when used, singly, and separate and apart from "the products thereof" means petroleum in its crude form; and the terms "product or products of petroleum" or "petroleum product or products" means such products of petroleum as are ordinarily shipped or transported by pipe line, tank car, tanker, tank trucks, including gasoline, naphtha, fuel oil, kerosene, distillates, road oil, gas oil, blended gasoline, crude tops, topped crude, blends or mixtures of petroleum with any product of petroleum, and lubricating oil. The terms "oil," "crude oil" and "crude petroleum" shall be considered synonymous with "petroleum" in these Regulations.

8. The term "East Texas area" when used in these Regulations or orders issued thereunder shall comprise the area included within an 80 mile radius of Kilgore, Texas, the term "Oklahoma City area" when so used shall comprise the area included within a 35 mile radius of Oklahoma City, Oklahoma.

IV.

All persons engaged in producing, refining, reclaiming, shipping, storing, transporting, buying or selling, or otherwise dealing in or handling petroleum or the products thereof shall permit any officer, agent, or employe of the Division of Investigations of the Department of the Interior to enter upon their properties, plants, or facilities and to examine all of the books and records kept or required to be kept in accordance with these Regulations and all other books, papers, records, vouchers, run tickets, bills of lading, way-bills, charts, memoranda or other documents which are used by them in the process of producing, storing, refining, reclaiming, transporting, handling or otherwise dealing with petroleum or the products thereof, and to inspect such plants, facilities and properties and to gauge tanks and to examine wells, pipe lines, gathering systems, flow lines, pipe connections, storage tanks, loading racks, separators, pumps, meters or other measuring devices and any other equipment or instruments.

V.

Every initial producer of petroleum, and every initial manufacturer of every product of petroleum, shall accurately gauge and measure all petroleum and all products thereof before any part thereof leaves his possession or control. No means or device which prevents such accurate measurement shall be used. Complete and accurate records of all such measurements shall be kept up to date and preserved, and shall be open to the inspection of any duly authorized agent of the Division of Investigations of the Department of the Interior at all reasonable times.

VI.

From the date of approval of these Regulations the following records shall be kept and preserved accurately and completely, showing the complete details of each transaction as follows:

A. By Producers:

(1) The location of the producing properties, the number and location of wells thereon, and the allowable production for each property and well as prescribed by the proper State agency.

(2) The names and addresses of all persons having any interest in or title to the petroleum at the time of its production, including those owning royalty or overriding royalty interests.

(3) An opening and closing inventory of the crude petroleum on hand each 24 hour day.

(4) The daily production in barrels of petroleum produced from each lease and well (estimated as to wells which are produced into common tankage and of which no separate gauge is made) with a notation of the allowance made for basic sediment and water, and the tanks, identified by number, into which the petroleum was produced.

(5) The amount of crude petroleum consumed, refined or processed upon the property daily.

(6) A daily record of all deliveries of crude petroleum or products thereof, showing the names and places of business of all persons to whom such petroleum or products thereof was delivered, whether purchasers, consignees or transporting agencies, the quantity involved in each delivery, transportation or other disposition, the identity of the means of transportation by which the petroleum or products thereof was removed, and the identifying numbers of tenders where tenders may be required by State regulatory bodies or by orders issued under these Regulations.

(9) For properties capable of producing in in excess of an average of 20 barrels per producing well per day, a diagram of the producing properties which shall accurately and completely show to scale the location and identifying number of each well on the properties, the location, capacity and identifying numbers of all tanks into which oil produced from said properties is run under the control of the producer prior to delivery to trunk pipe lines, the location and size of all pipe lines, flow lines, gathering systems or other outlets, and every method by which oil is delivered from said properties.

(10) True and complete copies of all reports and communications filed or required to be filed under these Regulations, or orders issued under these Regulations.

(11) Such other records as may now be required under the rules and regulations of other governmental agencies, State or Federal, which supervise, regulate or tax the production of petroleum.

B. By Every Purchaser, Refiner, Storer, Shipper or Consignor of Petroleum or Petroleum Products, and by Every Person dealing in Petroleum or Petroleum Products as a Factor, Broker, Buyer or Seller:

(1) An opening and clasing inventory of crude petroleum and petroleum products on hand each 24 hour day.

(2) The daily receipts of crude petroleum and the products thereof showing the amount received, the place and date of each receipt, the tanks identified by number into which received, the names and addresses of all producers or other persons from whom the crude petroleum and the products thereof were received, and a description identifying the transporting agency by which received.

(3) The amount of crude petroleum and the products thereot used or otherwise disposed of daily showing the amount run to stills and the amount and type of petroleum products produced.

(4) A daily record of all deliveries of petroleum and the products thereof in-

(*Continued on page 44*)

MEN IN THE INDUSTRY'S NEWS

Blank and Stoller

GEORGE S. BAYS

GEORGE S. BAYS

Made Advisory and Research Engineer for Stanolind Oil & Gas Company.

Mr. Bays, for the past four years chief engineer for the company, is a graduate of the University of Kansas from which he received a degree in civil engineering. His first connection with the oil industry was in 1912 when he joined the production department of Magnolia Petroleum Company. After four years he became chief engineer in charge of construction for Trinity Construction Company and subsequently was named vice president and general manager of Shamrock Oil Company. Three years later he became associated with McMan Oil Company for whom he had previously acted as chief engineer under an agreement between that organization and Magnolia Petroleum Company. Upon the acquisition of McMan Oil Company by Dixie Oil Company he was placed in charge of engineering work for the latter firm. In 1930 Dixie Oil Company was one of the companies combined to form Stanolind Oil & Gas Company of which Bays became chief engineer. Mr. Bays will continue to make his offices at Tulsa.

HARRY WARD, drilling superintendent for Attock Oil Company, Punjab, India, arrived in New York July 13 for a three months vacation in the United States after an absence of four years. He was accompanied by his wife. They left immediately for their home at Bradford, Pennsylvania. Mr. Ward plans to visit the outstanding oil fields of the country to study their drilling methods before returning to resume his job in India.

HEATH M. ROBINSON, geologist, has moved his office from 815 Tower Petroleum Building, to 406 Continental Building, Dallas, Texas.

HENRY G. HUNT, executive secretary of the Oil & Gas Association of Michigan, returned to Mt. Pleasant Saturday, from Tulsa, Oklahoma, where he represented the State Rig Builders' Association at a national meeting of rig builders.

R. E. GALLAGHER, president and E. W. Leeder, manager of Gallagher and Company of Buffalo, N. Y., are spending the next month in Mid-Continent oil centers studying conditions with the intention of drilling several tests in Texas, Oklahoma and Kansas. H. H. Kapner and Fred X. Sulzbach, both of Tulsa, are Mid-Continent representatives and engineers, respectively, for the company.

CAMILLO GUTIERREZ, Bogota, Colombia, has been added to the engineering staff of Carter Oil Company and assigned to the company's new division in Ponca City. Gutierrez is a graduate of Massachusetts Institute of Technology and of the Petroleum Engineering School of the University of Oklahoma.

DR. IONEL GARDESCU was the featured speaker at the weekly meeting of the Houston Geological Society July 26, discussing "The estimation of oil reserves by the use of the rate-cumulative production curve."

M. B. SWEENEY, manager of the Dallas district offices of Sun Oil Company, and T. L. Foster, chief counsel for the latter district, accompanied by members of their respective families, are making an automobile tour of the New England States.

L. E. and L. M. LOCKHART, president and vice president, respectively, of Invincible Oil Company, departed from Dallas general offices of the company last week on a business mission to Los Angeles. The above concern was organized by the Lockhart brothers following sale of their stock interest in Rio Grande Oil Company to Consolidated Oil Corporation, and has two large leases in process of development in the Gladewater section of the East Texas field.

DORSEY HAGAR, consulting petroleum geologist, has opened offices at 918 Chrysler Building, New York, N. Y.

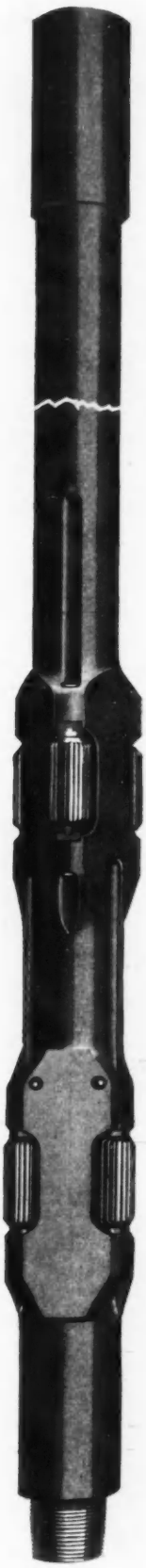
EDWARD T. McGRATH and John H. York, representatives of the Bureau of Labor Statistics, United States Department of Labor, Washington, D. C., spent the week in Tulsa interviewing oil companies and employees regarding data dealing with labor conditions in the Mid-Continent area. Investigations in the area probably will not be concluded in less than 60 days.

W. F. COSTELLA, vice president of Grogan Oil Company, Shreveport, La., was a Tulsa visitor during the early portion of the week.

C. C. POPE, scout and land man for Sun Oil Company in the West Texas district with headquarters at San Angelo, departed last week on a vacation visit to Mexico City.

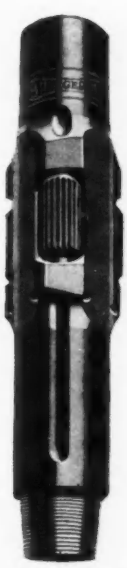
JACK B. GAMBRELL, 46, veteran oil writer in the Mid-Continent and until recently secretary of the Texas Independent Refiners Association, died July 24 from the effects of poison at the home of a relative at Dallas, Texas. He is survived by his wife and two children. Funeral services were held July 26, with interment in a Dallas cemetery.

Now You Can RENT BRIDGEPORT ROTARY REAMERS



Type B
Double 3-Point

Type A
Double 3-Point



Type A
Single 3-Point

Any type or size may be rented.

Because Bridgeport Rotary Reamer Cutters wear longer and ream more hole per set, cutter expense is extremely reasonable.

WE NOW OFFER A NEW SERVICE TO ASSIST YOU IN REDUCING DRILLING EXPENSES:

You may now rent the size Rotary Reamer needed —when it is needed—and for the period of time needed—from the nearest Bridgeport Store at a nominal rental fee.

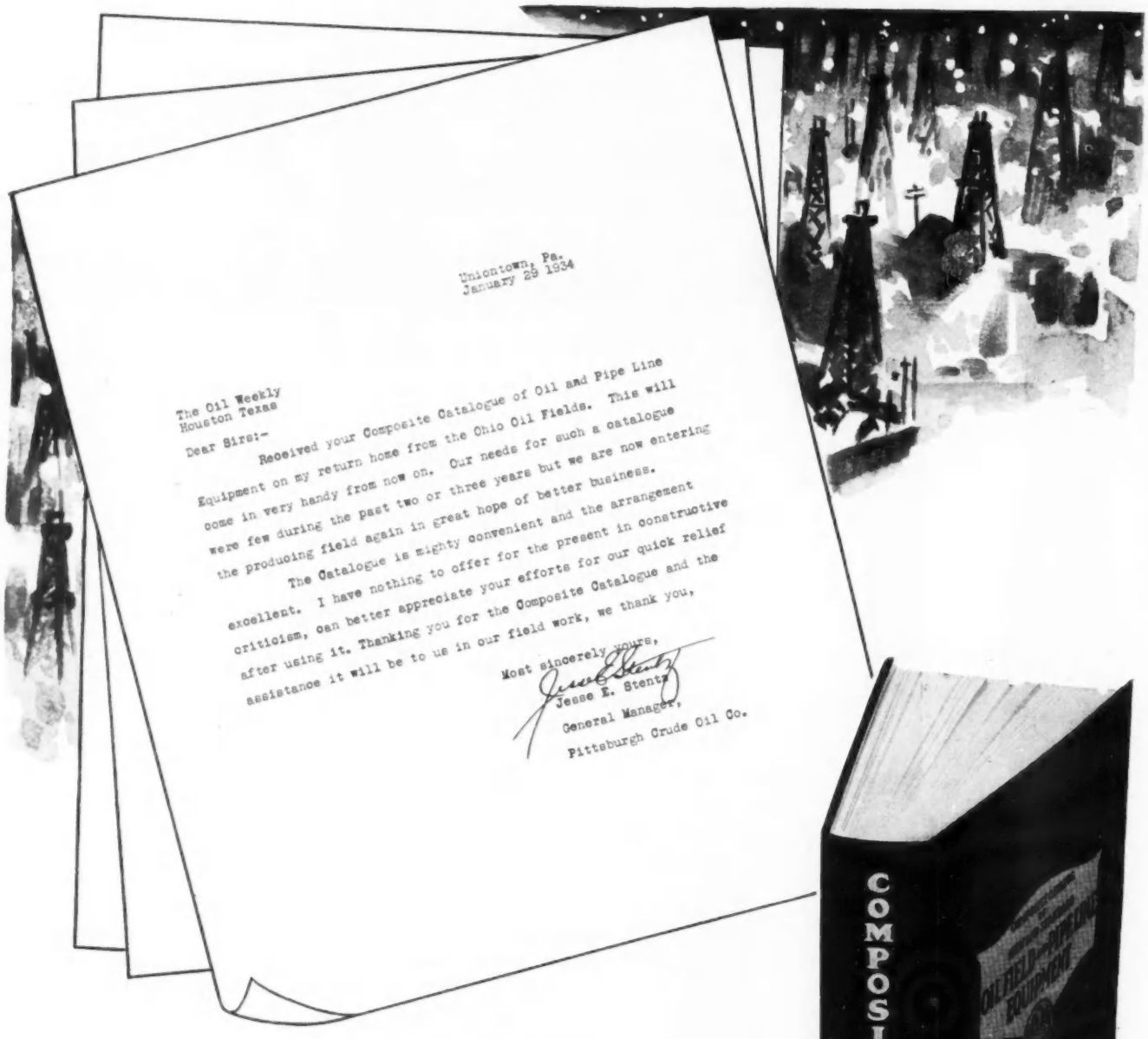
This new service eliminates for you the cost of carrying an investment in several sizes of reamers . . . . the cost of depreciation . . . . the cost of keeping the tools in repair . . . . the responsibility of having them in condition to use when they are needed . . . . the responsibility of having all sizes instantly available when and where they are needed . . . the cost of moving them from place to place . . . . the cost of obsolescence, occasioned by the development of new and improved models, etc.

Any size may be used for 75 days or less at a minimum rental cost of from $60 to $150, plus the cost of new cutters, the rental charge depending upon the size and type of reamer required. For a small extra day charge the tool may be retained for an indefinite period.

For complete information and rental reamers, contact our nearest store or Wichita, Kansas Office.

BRIDGEPORT
MACHINE COMPANY
MANUFACTURERS DISTRIBUTORS
OIL DRILLING-FISHING AND PRODUCTION EQUIPMENT
GENERAL OFFICE—WICHITA, KANSAS

"Mighty Convenient" says this gen'l manager in Pennsylvania



Uniontown, Pa.
January 29 1934

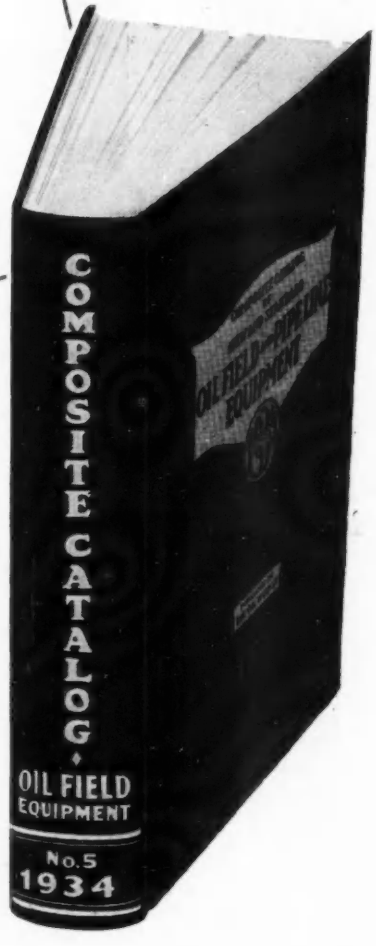
The Oil Weekly
Houston Texas

Dear Sirs:-

Received your Composite Catalogue of Oil and Pipe Line Equipment on my return home from the Ohio Oil Fields. This will come in very handy from now on. Our needs for such a catalogue were few during the past two or three years but we are now entering the producing field again in great hope of better business.

The Catalogue is mighty convenient and the arrangement excellent. I have nothing to offer for the present in constructive criticism, can better appreciate your efforts for our quick relief after using it. Thanking you for the Composite Catalogue and the assistance it will be to us in our field work, we thank you,

Most sincerely yours,
Jesse E. Stentz
General Manager,
Pittsburgh Crude Oil Co.



Regardless of the state, wherever oil is produced the Composite Catalog finds its users. The above letter from the general manager of the Pittsburgh Crude Oil Company gives the advantages of the Composite Catalog in concise form.

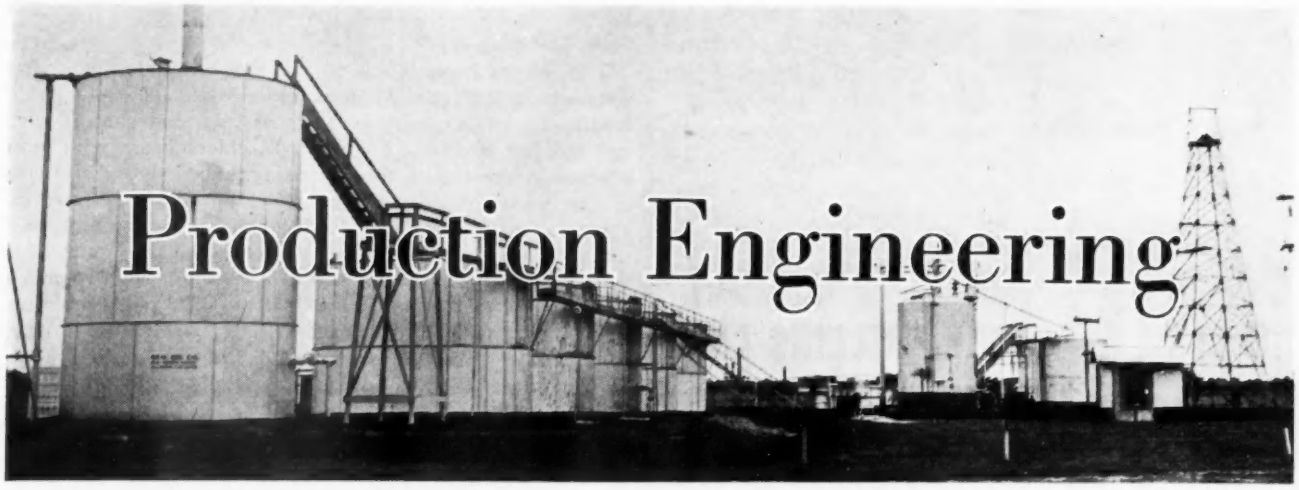
Use your Composite Catalog.

The Composite Catalog is not intended to take the place of a supply company general catalog but is intended to supplement such catalogs.

You'll find it in the

COMPOSITE CATALOG

of Oil Field and Pipe Line Equipment



Unitization Proves Itself

VANCE ROWE
The Carter Oil Company

HASTE, the sages have told us, makes waste. The oil industry probably invented the first part of that ancient axiom. Since its inception it has rushed along with the anxious speed of a late mail train. Slow-down warnings were disregarded as fluttering gestures of fogy alarmists. That excessive haste had its inevitable consequence apparently never occurred to a rampaging industrial prodigy.

The path of the oil caravan as it moved westward from Titusville through Ohio and Illinois and down into the great Southwest was strewn with the waste and debris of a spreeing giant. The reckless orgy left an impression that time and sobering reformation has been unable completely to overcome. The haste and waste of the business built a reputation of great affluence. It has paid very dearly for that reputation.

The wasteful evils of unrestrained drilling and its overproduction companion is by no means a Twentieth Century product. It is nearly as old as the business itself. By luck and unexpected developments the industry has been able to maintain some degree of balance. Increasing world-wide use of automobiles, the buoyancy of general business and the demands of the World War all contributed to a fast-stepping consumption.

But overproduction has been an ever lurking threat. In spite of the fact that early day drilling methods and transportation facilities provided somewhat of a lapse between threatening fields, production more than held its own. It required only the advancement of geology, the rotary drill and fleet of trucks on good roads to place the overproduction evil squarely up to the business for urgent correction.

However, such a long-standing evil is not corrected by short diagnosis and superficial treatment. Long before the breakdown, constructive leaders endowed with a sentient attitude towards their business had groped for a definite solution that might prove a cure of permanent qualities. The two instruments they developed for choking off the overproduction menace and setting the industry on a healthy, common-sense basis were proration and unitization. The words themselves were deliberate-sounding, not flip and easy like "haste and waste."

Proration in Oklahoma has had a long hard road to travel. Many times its most loyal supporters were discouraged with the results. Reluctance of a great many sincere and responsible operators to accept it as an unselfish motive presented a serious obstacle. However, proration finally asserted its universal benefits and this fact was substantiated last year when the Oklahoma legislature adopted a strong proration law that operates smoothly and to the general satisfaction of all operators. Probably the greatest tribute to the integrity of proration is the 100 percent opposition on the part of the element known popularly as "chiselers."

Voluntary unitization of wildcats—more commonly known as community tests—is rapidly gaining favor with Oklahoma operators, and at this time 15 wells are being drilled under the plan.

The mere statement that proration measures and unitization tactics are of great economic and social benefit to the oil industry is not enough for practical oil men. The development of oil is a hard business built on facts and figures, with results the only measuring stick.

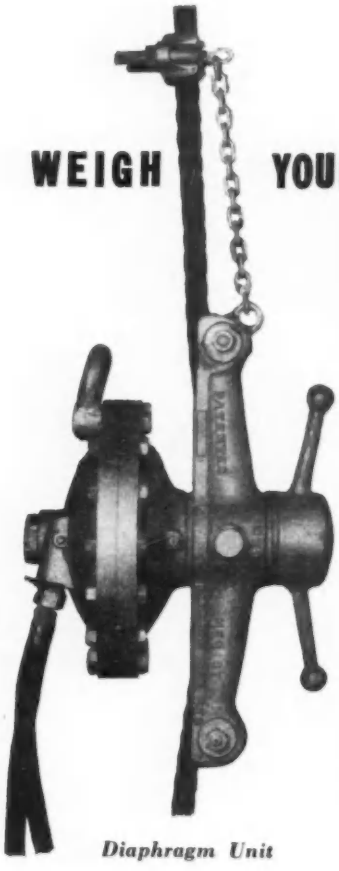
Today there is so much recorded data on the matter that volumes of facts and yards of figures would be unable to digest the available material.

REALIZING that facts are more convincing than theories, however sound, Mr. Rowe recently made a careful study of the actual results of proration and orderly development in the Mid-Continent in terms of dollars and cents, barrels of oil and cubic feet of gas. His observations not only make a most convincing case for common-sense methods in crude production, but an interesting story into the bargain.

In publishing this article we are indebted to *The Lamp*, where it appeared originally.

WEIGH YOUR DRILLING LOAD

as you weigh yourself . . . DIRECTLY



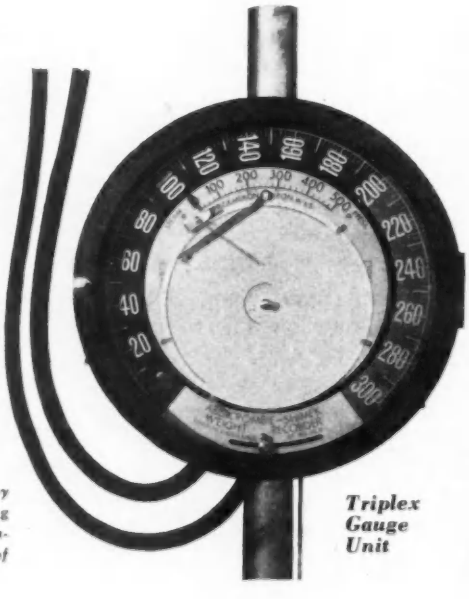
Diaphragm Unit

Calibration tables, involving a lot of figuring to arrive at the total drilling load, are no longer necessary with this advancement in weight Indicating and Recording. Your weight is now Indicated and Recorded *directly* in thousands of pounds.

Accuracy of the instrument is not affected by air in the system, small leaks or temperature changes.

Servicing is minimized since calibration or adjustment at frequent intervals is unnecessary.

And extra protective housing is eliminated, since the Triplex Gauge Unit is mounted within a dust and weather proof case, shown here.



Triplex Gauge Unit

Write for your copy of Cameron's catalog covering this improved method of weight recording.

CAMERON IRON WORKS, INC.

HOUSTON, TEXAS

Export: 74 Trinity Place, N. Y. C. ED. TAULBEE, Odessa, Texas
L. D. HILTON, Oklahoma City. FORD DE CORDOVA, Lake Charles, La.

But a few pointed comparisons on development will present a fairly fresh picture.

The Little River pool of the Seminole area was discovered in 1927. In 30 days more than 100 wells were frantically drilling, with contractors waging a contest with one another to reach the sand. Reckless haste with mad confusion obliterated the reasoning knowledge that there is a producing edge to every pool. Maps show and records corroborate the fact that 40 dry holes were strung along the west side of Little River to determine the limits of a pool which turned out to be six miles long and two miles wide. These 40 dry holes were around 4500 feet deep with an average cost of $50,000 per well. This is only one item of $2,000,000 charged to reckless drilling in a single pool. The identical situation could be multiplied many times.

Compare the Little River situation with the Lucien pool—one of the newer fields in Oklahoma being largely developed under a unitized agreement plan.

Lucien, like Little River, is a long and comparatively thin pool and both produce most of their oil from the Wilcox sand. The discovery at Lucien was completed in October, 1932, and we find 18 months later that 25 wells have been completed with a combined capacity of 65,000 barrels. Proration and unitization provided a leisurely development which enabled the operators to study the situation and map out a program. This calm method of doing business resulted in only three dry holes being drilled on the west edge to practically prove the producing limits on that side. Three failures against 40 at Little River—in a situation affording a real comparison. It is a significant contrast in drilling practices.

A careful study by statisticians of the Mid-Continent Oil & Gas Association in 1930 on the Seminole City pool resulted in a figure statement showing that under a unitization of working interests the pool would have shown a greater financial recovery to the tune of $32,500,000. Quoting from the report: "This statement does not account for additional profits from gasoline, nor possible increase in recovery, nor a better oil market from better control, nor that wider spacing of wells might have been adopted without lessening the recoverable oil."

Oklahoma City

In recent years the most destructive orgy of reckless drilling occurred in the very deep and very expensive Oklahoma City field. If you like big figures, here they are:

The Wilcox zone at Oklahoma City has 500 wells, or one well to every five acres. In round numbers, the cost of these 500 wells is $60,000,000. The Wilcox sand is very porous and one well to 10 acres would have been ample for maximum recovery. In other words, half as many wells would have saved the operators a cool $30,000,000!

On top of this, a great many engineers would recommend one well to 20 acres at Oklahoma City—a $40,000,000 saving. There are a few—and their judgment is rated well—who would have drilled one well to 40 acres.

These important savings were possible under unitization. Instead, a high-powered drilling campaign swung into action. The casualty records show one case where a defenseless little 40-acre tract was riddled with 25 deep holes. In other words, a good time was had by all—up to the time reckless drilling encountered its old friend "dissipated gas energy."

Reckless drilling and dissipation of gas energy go together like two sailors on a jamboree after six months at sea. The headache is lifting costs, and if there is one thing that will start an oil man to muttering to himself it is the mention of lifting costs.

In the "good old days" big fields were sensationalized,

with unrestrained gushers blowing their unmarketable oil all over the landscape into expensive steel tanks where the crude lay for years undisturbed except by heavy evaporation losses and equally heavy taxes. In many cases of inadequate facilities the oil and gas flowed over and through the landscape to provide large picturesque fires for the public and equally brilliant losses for the oil business.

Comparisons

The Cromwell pool, discovered in 1922, is a fair example of competitive operations in the "good old days." The Bureau of Mines investigated this field and found that 60 wells on top of the structure produced an average of 37,000 cubic feet of gas to every barrel of oil.

From this lead reputable authorities made a detailed survey of the Cromwell situation and in a report stated highly competitive conditions had brought about some gigantic losses. It was pointed out that under unitization a saving of 84 wells might have been accomplished, the oil recovery per acre would probably have been doubled, royalty owners would have been paid $5,000,000 additional money and operating profits would have increased 170 percent.

Conservation of gas energy and bottom-hole pressures in the "good old days" were viewed as mysterious words whose meaning was clear only to gentlemen with long Van Dyke beards and dark glasses. Today the up-to-date oil man watches his pressures as closely as his bank balance.

The greatest dissipation of natural flow energy that has ever occurred in Oklahoma took place, strangely enough, in the deepest pool of the state. That was in the famous Oklahoma City field. The frightful waste of gas there has been discussed so widely and so vigorously that it will probably be a legend to be handed down as a horrible example to the future oil men of the state.

Only last year an engineer for one prominent concern at Oklahoma City testified that his company's 20 wells had actually dissipated four billion feet of gas. The wells had a gas-oil ratio of 40,000 to one. That is at least 20 times too much gas for one barrel of oil.

Oklahoma City has produced 225 million barrels of oil. Many engineers believe it will ultimately make 350 million. Some say more. In any event it is well known that many of the wells are going prematurely to artificial lift. The lifting costs under natural flow was around five cents a barrel. Artificial lift will range from 25 cents upward. In other words, 100,000 barrels daily should have been produced for a long time at $5000 a day instead of $25,000 a day. That is important money in any language.

That conservation under unitization could have accomplished wonders at Oklahoma City no one will deny. In smaller pools the natural flow energy has been maintained for long periods of time.

Unitization Today

Two pools in the Rocky Mountails, where control of operations made it possible to conserve energy, have shown startling results. The Sundance at Salt Creek, Wyoming, is flowing "under its own steam" again after eight years. The Hogback field in New Mexico is still a flowing field after 10 years of production.

In the unitized Keokuk Falls pool of the Seminole area, which is operated by The Carter Oil Company, a close study of conditions has resulted in producing tactics that have produced gratifying results. Wells were back-pressured in a manner best fitted for their individual characteristics to arrive at an even pressure over the structure. After some months the company actually succeeded in increasing the bottom hole pressures of Keokuk Falls wells.

Wider spacing of wells and back-pressuring to conserve flowing energy are without doubt the two most significant economic adjustments in the new era of producing oil. They are possible only under the administration of proration and unitization.

At the present time there are six oil pools in Oklahoma being developed under unitization methods. The Carter Oil Company operates five of these pools in the Seminole area and is a participant in the other—the Lucien block operated by Shell Petroleum Corporation. In the meantime the new idea of community tests is becoming increasingly popular and a representative group of concerns are included in the 15 community wildcats now being drilled in the state.

Among the newer flush pools in Oklahoma are Lucien, Crescent, Keokuk Falls, South Burbank and West Chandler. Although some of these pools are nearly two years old they are still in the early stages of development. A large portion of the wells are good for 5000 to 10,000 barrels a day. They have a present combined capacity better than 250,000 barrels a day. Yet operations are conducted so leisurely that they rarely make the headlines. Turn them loose on a drilling contest with five-acre locations instead of 20 and 40 acres and you would have the same old trouble.

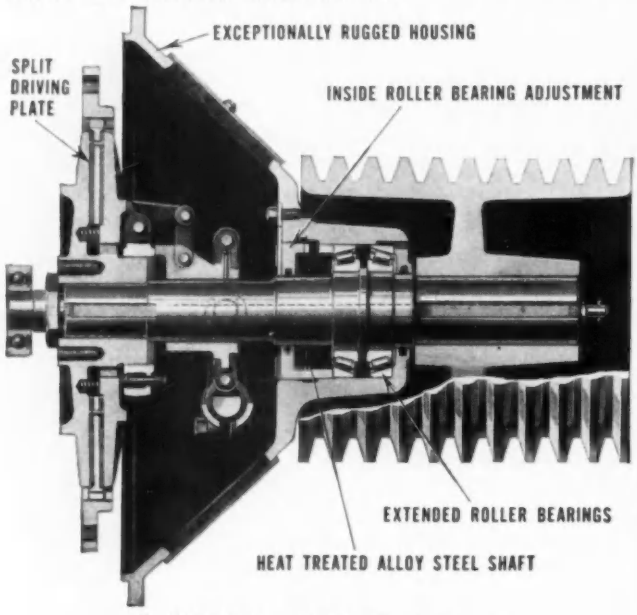
The Human Side of It

With proration and unitization clearing the economic horizon, no less important is the marvelous improvement in the social atmosphere of the fields. The dizzy pace of bygone days afforded oil people scant opportunity to enjoy even the common decencies of life.

Not many years ago an oil field was characterized by tumble-down shacks, greasy tents, graveyards of tin cans, yawning, cavernous roads, flies, bad water, bad whiskey, tin-horn gamblers and expensive blondes. The oil-soaked fields with their gaunt trees were strewn with the twisted and discarded remnants of the rampage. Conditions were bad and environment worse.

It takes no grizzled veteran to recall the flush days of Glenn pool when a post mortem at Keifer was on the routine schedule of daily affairs. Or down in the Healdton field where Ragtown (aptly named) burned down quite regularly every Saturday night and was up and ready for

Twin Disc Power Take-Off Unit No. 8246 (embodying Clutch B-1-11½, with split driving plate). Fitted with exceptionally rugged housing . . . oversize tapered roller bearings extend out well under the sheave pulley. Bearing adjustment may be made from inside housing through hand hole, *without removing sheave.* To facilitate replacement, all lubricating fittings are accessible and bearing end of housing has no external projections or fixtures. This permits use of small diameter sheaves.



ANNOUNCING

IMPROVED POWER TAKE-OFF UNITS

FOR OIL WELL PUMPING

Recognizing the extraordinarily severe operations encountered in continuous oil well pumping service, Twin Disc Engineers have developed a new and improved series of Power Take-Off Units—especially designed and built to stand the gaff on even the most difficult pumping jobs. Sixteen years close cooperation with the oil industry in solving its clutch problems makes the advice of Twin Disc Engineers decidedly valuable to you. *Write* for specific recommendations. Engineering data on request. *Twin Disc Clutch Company, 1336 Racine St., Racine, Wis.*

SALES and SERVICE

FORT WORTH
Jno. Mueller Co.
312 Throckmorton

TULSA
Buda Engine Service Co.
of Tulsa, Inc.

TWIN DISC CLUTCHES

business Monday morning. The robust days of Cushing, Drumright and Shamrock are well remembered to drillers and tool dressers who sleeved a billy club to protect themselves from highjackers making the round of drilling rigs. The famous "Alley" at Seminole was well equipped to relieve the workers of the trouble of making deposit trips to the bank.

These were the "good old days" when oil workers wearied with long hours and heavy with wages went to town for the pay-day fiesta. They usually kicked off by buying a $12 silk shirt, sleeping in it over the week-end and going back to work in it on Monday.

In this sort of surroundings the women of the oil country made brave attempts to fashion homes that would bear some resemblance to the meaning of the word. It was pretty difficult. The children could hardly escape the torrid language from the brawls of the hard-faced riff-raff that swarmed to the scene of activity. Their flower gardens would wither in the atmosphere. Their canine pets howled at the tin pan music of the evening. The air had the deodorized smell of a sick-room.

Calming down operations has wrought a big change. It might be termed the social transition of oil. The slower way of doing things has enabled oil people to carry out their cherished hopes of living quietly and decently. Pasteboard boom towns—erected hurriedly by the vulturine riff-raff for the looting of workers—are on their way out. The former sneer at calm people and calm business. It has no place in their schemes and they have abandoned it for more fertile fields.

The shiny orderliness and immaculate cleanliness of today's oil field is as refreshing as a sleep between cool, clean sheets. Oil camps are maintained with prideful efforts to look better than the one across the road. Flowers bloom in the spring, children play in green grass, mothers can tea and bridge while fathers take out stock in their company stock plan instead of playing one up at Tony's Place. This may sound a little whip-creamy, but ask any old-timer if it is not the case.

Take the Crescent pool in Logan County. Many of the wells over there are capable of producing 10,000 barrels a day. They are completed, produce to capacity 24 hours and then are pinched back to eight percent of their certified potential. There are no spectacular spoutings of wells at Crescent—or at any of the other newer fields in Oklahoma. Subduing a gusher is an easy matter because they are seldom out of control. A lease foreman nowadays—if he is sartorially fastidious—can safely do his work in his Sunday clothes.

These statements of fact should not be construed to mean that the business is going soft or dawdling on the job. It simply proves that a business can be rugged—even a little rough—and yet be clean. One old veteran attending the International Petroleum Exposition at Tulsa covered the present oil field situation pretty well when he remarked, "They've cleaned her up—but hell, she is better than ever."

All these miraculous advances have become actualities through the accomplishment of what every legitimate oil man has long advocated—slowing up the business to a normal gait. Unitization and proration are doing that very thing and, like sturdy tugboats lugging a disabled liner into port, they are slowly but surely leading a bewildered industrial giant into the haven of economic and social security.

Oakville sandstone on the north end of the northern Loma Alto mesa, southeastern McMullen County. Note many round holes worn in the rock.

Surface Geology of Northwest Part of Government Wells Producing District, *Duval, County*

RICHARD A. JONES
Geologist

TWELVE years ago Duval County, South Texas, between Laredo and Corpus Christi, was a region of great cattle ranches. It was known as the "Kingdom of Duval," for the reason that it conducted its affairs almost as an independent principality. Wildcatters were just beginning to drill here and there in the county, following the discovery of oil in the Mirando Valley pool, Zapata County, southeast of Laredo, in 1921. Today the cattle ranches, miles long and miles wide, still exist in Duval County, but there are also about a dozen oil or gas fields in the county, and it has become one of the most important oil and gas producing districts in Texas.

The Government Wells area is the most important field in Duval County. Strictly speaking, there are several pools in the Government Wells district: the original Government Wells field; the North and South Government Wells fields; and the Sarnosa and Eagle Hill pools. Taken as a whole, however, all these pools constitute one major field about 15 miles long. In April, 1934, the Government Wells district produced 486,886 barrels of oil from 498 wells.

General Geology

To one who drives casually over the main highways of Duval County, few regions appear to have less distinctive geology. The roads traverse mile after mile of rolling ranch country, covered with mesquite and cactus growing in a reddish sandy soil, with fragmentary outcrops of the white limestone known as "caliche" protruding through the sand in many places, or capping the rounded elevations. However, close examination of the county, especially the western and northwestern parts, reveals some of the most interesting geology to be found in the Coastal Plains of Texas.

Trending across the western portion of Duval County, in a northeast-southwest direction, is a west-facing escarpment, the Reynosa Escarpment. This long line of broken and dissected bluffs, sometimes obscured and worn down, in other places bold and rugged, marks the northwestern

limit of the outcrop of the Reynosa formation, which includes the sand, gravel, and caliche that mantles so much of Duval County. The Reynosa Escarpment lies a short distance east of the Government Wells producing area. The two prominent mesas, immediately east of the old or original Government Wells field, discovered in 1928, are called "Las Hermanitas," or "The Twin Sisters;" and are outliers of the Reynosa Escarpment.

The formations outcropping in northwestern Duval County, west of the Reynosa Escarpment, are the Oakville sandstone of the Miocene, the Gueydan series of the Oligocene, and the Frio clay of the Oligocene or possibly of the upper Eocene. The Gueydan series consists of three members, from oldest to youngest, as follows: the Fant tuff; the Soledad volcanic conglomerate and sandstone; and the Chusa tuffaceous clay. "Tuff" is another name for volcanic ash, and the Gueydan group is characterized by large amounts of this igneous deposit.

Two hills, known together as "Loma Alto," or "High Hill," form prominent landmarks in southern McMullen County, about two miles north of the Duval County line. The character of the rocks exposed in these hills is shown by the following section of the southernmost mesa. All except the lowest 17 feet belong to the Oakville sandstone. The lowest slopes of the hill are Chusa tuff and clay.

	Thickness
Capping mesa—brown, coarse, flaggy sandstone: lower half very soft, upper half quite hard.....	40-45 feet
Heavy quartzitic bed of coarse gray sandstone or grit, with clay-ball inclusions; usually weathers into potholes, but sometimes flaggy; sometimes laminated	5-10 feet
Brown clayey material with thin white caliche seams; some soft grit	35 feet
Coarse brown sandstone or grit; clay-ball inclusions; fragments of silicified palm wood; forms bench around hill	2 feet
Brown clayey material with thin white caliche seams	17 feet
	99-109 feet

Ancient Volcanoes

In the central part of the Gueydan series, that is, in the Soledad formation, is much sandstone of a greenish color, from yellowish-green to a bright vivid green. Numerous outcrops of this green sandstone occur throughout the extent of the Soledad formation, and may be observed in the vicinity of the old Government Wells fields in the southwest quarter of Survey 359. This unusual sandstone contains much volcanic material, many of the sand grains being particles of lava or of volcanic glass.

For many years geologists have noticed in northwestern Duval and southeastern McMullen Counties, numerous pebbles and boulders of igneous rock. The pebbles are, roughly classified, of three colors—dark-green to black pebbles, brown pebbles, and red pebbles. In field classification, the dark-colored pebbles may be called "Bassaltic" lava, and the brown and red pebbles "Andesite." Most of the volcanic fragments are small, but some are over a foot in diameter. Some of the boulders have a dense, fine-grained texture with large porphyritic crystals in the ground mass; others are vesicular with cavities that are often lined with opal. Certain of the pebbles, especially the reddish ones, are very porous and light in weight. These resemble volcanic bombs from the explosive eruption of a volcano.

In addition to the volcanic pebbles and boulders, there is, as has been mentioned, a great amount of volcanic ash in the Gueydan series of McMullen and Duval Counties. Some of the ash beds are 15 or more feet thick. The deposits of volcanic ash and the many igneous pebbles all indicate that there have been volcanic eruptions in the vicinity of northwestern Duval County in the geologic past. These eruptions were of the explosive type, during which great clouds of volcanic dust were ejected and volcanic bombs were thrown into the air.

The exact location of the vents from which this volcanic material was thrown out is a mystery. The volcanic ash is light and could have been carried long distances by the wind. Many of the igneous boulders, however, are fresh, and not even fully rounded; and it is not believed that the streams have transported them very far from their original source. It is possible that the eroded cones or stumps of the ancient volcanoes are buried under the Reynosa or other formations east of the Government Wells fields. The many holes drilled all through the region have, it is true, so far failed to encounter any signs of buried volcanic cones; but a volcano does not occupy a large area, and the worn-down cone of an ancient volcano might not be found by drilling for many years, and might even escape discovery altogether. This volcanic activity in the Coastal Plain of Texas in past geologic times is one of the most interesting geological features of Duval County.

Chalcedony Hills and Minerals Veins

In various places along the Reynosa Escarpment throughout the Laredo or Mirando petroleum district are knobs of chalcedony or flint, beds of quartzite or indurated sandstone, and veins of chalcedony and other minerals, such as calcite and aragonite. The material of these veins and knobs has been deposited by mineralized waters ascending along fault planes or along simple fissures and cracks. In some cases the mineral deposits indicate faulting and geologic structure; in other localities they do not. As a whole, however, this widespread group of chalcedony hills and silica veins is related to a zone of folding and faulting that approximately coincides with the trend of the Reynosa Escarpment, although extending both to the east and west of the escarpment.

The surface geology in western and northwestern Duval County presents an assemblage of chalcedony knobs and hills and of silica and aragonite veins that surpasses that exhibited anywhere else along the Reynosa Escarpment. Many of these hills and veins are outside of the area discussed in the present paper, which is confined to the northwestern part of the Government Wells producing district; but, on the other hand, some of the most extraordinary chalcedony hills are found adjoining the northern part of the Government Wells field.

Picachos Hills

The Picachos Hills ("The Peaks"), at the southeast corner of Survey 265, Duval County, are altogether remarkable, and have long been objects of great interest to geologists. There are two main hills and some smaller knobs. Their rugged appearance is due to heavy beds of chalcedony or flint, which are practically vertical, dipping to the northwest at an angle of 75 degrees. The strike of these uptilted beds, or rather mineral veins, is north 40 degrees east. A few yards from the vertical beds are outcrops of altered, ashy shale, dipping 15 degrees, south 50 degrees east. All manner of material is exposed in the hills, including chalcedony, iron stains, silicified green clays, and veins and flower-like masses of aragonite. It may be mentioned here that aragonite is a form of crystallized calcium car-

bonate, related to calcite, but distinguished by the fact that it usually breaks into long, needle-like splinters and is often brown in color, in contrast to the customary translucent white of calcite.

Extending for several miles northeast from the Picachos Hills are many chalcedony and quartzite knobs and hills. In Survey 266, adjoining the Picachos are several chalcedony knobs of small size, and many veins of chalcedony trending north 40 degrees east. Approximately in the southeast quarter of Survey 392 is a hillock of quartzite, the strata of which dip two degrees to the southeast and contain small bones, possibly those of the little prehistoric horses that once roamed over Texas.

Across the county line, there is a large chalcedony knob in Survey 114, McMullen County; and a still larger one in Survey 113, also in McMullen County. In Survey 115, which lies in both McMullen and Duval Counties, there is a group of chalcedony knobs, seven in number, which are called the "Painted Rocks." This name is derived from the varied coloration of the knobs, a coloration due, however, not to the rocks themselves, but to mosses and lichens with which they are in places encrusted.

Eagle Hill Oil Field

Southwest of the Picachos Hills, the veins and knobs of chalcedony are as pronounced as they are in the area to the northeast. Approximately in the southeast corner of Survey 206 are two chalcedony knobs known as "Las Aguilas" or "The Eagle Hills." One of these is a very large and prominent chalcedony hill, the other is smaller. Some 10 years ago there used to be a cave, called the "Robbers' Cave," a short distance southwest of the Eagle Hills. Veins of chalcedony, aragonite, and yellowish-green clayey material were formerly exposed at this cave; although when last visited by the writer a number of years ago the cave was even then almost filled with soil and other debris. The veins dipped 52 degrees, in a direction south 50 degrees east.

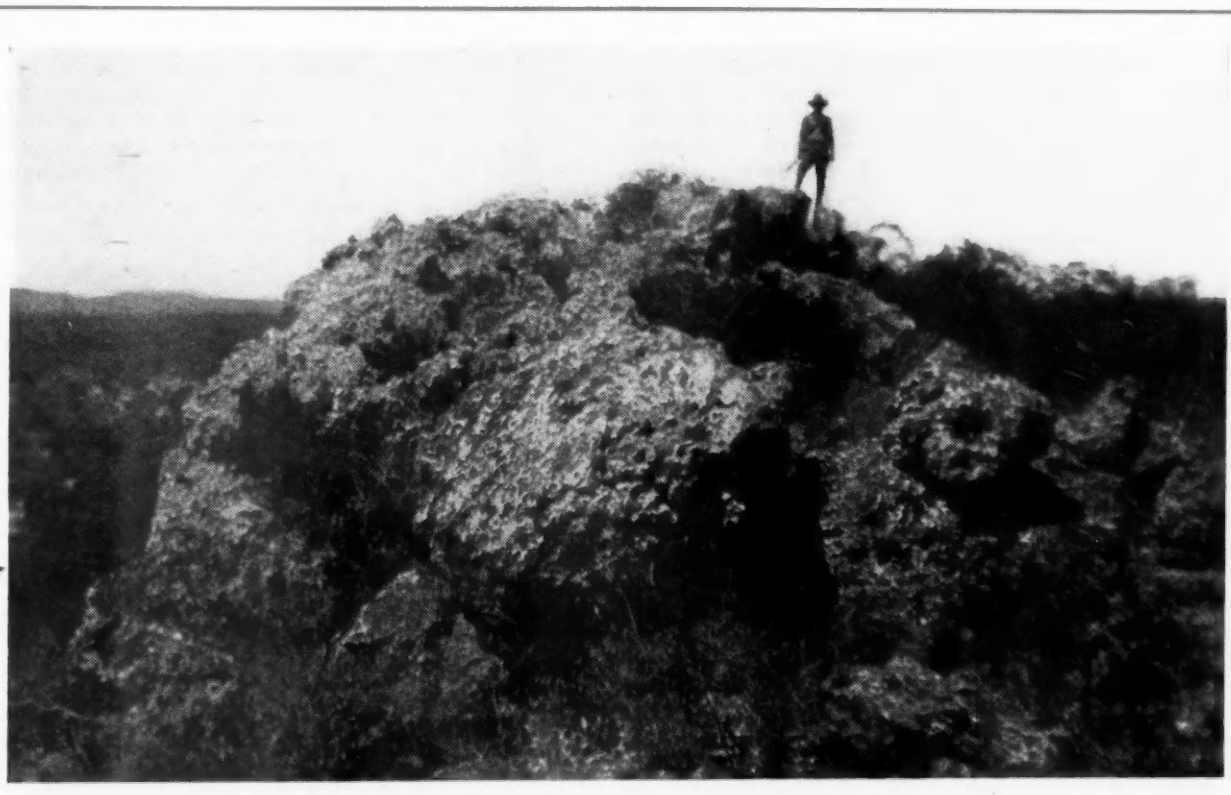
About in the south part of Survey 201, around one mile southwest of the Eagle Hills, is a remarkable vein of aragonite. This vein is several hundred yards long, and in places 40 to 50 feet wide. It is on the south edge of some low hills, and almost forms a bluff. Northwest of the Eagle Hills, near the west line of Survey 270, are some hogbacks of hard Oakville grit and sandstone that dip steeply to the northeast at angles of 10 to 15 degrees.

It is in this area of the Eagle Hills, with its chalcedony knobs, great aragonite veins, and often steeply inclined strata, that the Eagle Hills oil field was discovered. On October 15, 1933, Al Buchanan et al's Duval County Ranch 1, Survey 206, was brought in, flowing at the rate of 20 barrels an hour through two-inch tubing from the "Cole sand" at 1475-1483 feet. By May, 1934, 15 other wells had been completed, although development had been slow, and the field was producing 405 barrels per day under proration restrictions.

Northwest Government Wells Faulted Anticline

The manifestations of structure continue on southwest from the Eagle Hill field for several miles. There are not any more large chalcedony knobs, but the number of veins of aragonite and of chalcedonic material is so great that there is space in this article to mention only some of the more striking occurrences. In the central part of Survey 95 are veins of aragonite and silicified tuff. In Survey 203 there may be considerable fault. About the middle of the survey, large exposures of sandstone in a gully show northwest dips of around 10 degrees, and are also much crumpled and twisted in places. Southeast of this disturbed zone, outcrops white volcanic ash.

In this area southwest of Eagle Hill there seem to be two lines or trends of veining, roughly parallel, and about a



Rough masses of chalcedony on the summit of Los Picachos Hills, northwestern Duval County

mile apart. The westerly trend appears to run from the Eagle Hills southwest through Surveys 201, 203, 95, 97, and 364 into Survey 388, near a round, very brushy elevation, known as "Devil's Hill." There may be faulting a short distance south of Devil's Hill, for there are upended beds striking north 40 degrees east, and large exposures of standstone nearby have a southeast dip of 25 degrees.

The easterly trend of veining seems to start in the vicinity of a great aragonite vein in Survey 204; thence extending southwest through Surveys 96, 362, 363, 361, 365, 53, and 54. There is a very pronounced zone of silicious veining near the central part of Survey 365. About a mile further southwest, about the center of the east line of Survey 54, there is a wide zone of sandstone, apparently on end and striking from north 50 to north 70 degrees east.

In addition to the many mineralized veins and the evidences of faulting present in this area, the existence of a surface anticline is indicated by numerous dips. There is not space here to mention all these dips, but some of the more important localities will be noted. Near the old Government Wells, in Survey 359, there are strong northeast dips in the Soledad sandstones. In the area to the west there are southwest, west, or northwest dips in Surveys 361, 363, and 364 in the same sandstone series. There is a large amount of southwest or reverse dip along a northeast-facing escarpment in Surveys 53 and 366. In general, much reverse or westerly dip occurs from Survey 96 southwestward to Survey 54. It was probably these dips denoting anticlinal structure that caused Sun Oil Company to procure a lease on the Weiderkehr ranch over 10 years ago. This lease now comprises valuable oil-producing land.

The writer's conclusion, from work done some years ago, was that a large anticline, complicated by faulting, extends northeast and southwest from McMullen County northeast of the Picachos Hills to about Survey 50, Duval County, being perhaps 15 miles long. The many chalcedony hills and the veins of chalcedony and aragonite denote either fissuring or faulting with distinct displacement; and the west dips, in contrast to the normal southeast dip of the strata of Duval County, show folding. From the Picachos Hills the axis of the anticline was approximately placed, by the writer, as passing southwest into the vicinity of Survey 206 and the Eagle Hills chalcedony knobs; thence continuing southwestward into Survey 96; and from there continuing still southwestward through Surveys 362, 363, 361, 55, and 51. The axis appears to bend and twist in some places, and the entire structure is no doubt complex, due to faulting.

The westerly dips are steep, from five to 12 degrees, or even more. This is far steeper than any dips disclosed by subsurface information in the Government Wells area. However, all these dips were mapped in the Soledad sandstones, which may have been a brittle formation in comparison with the thick beds of ash and clay enclosing the volcanic sandstones; and the folding may have given these sandstones a steeper dip than the general dip of the structure. This phenomenon has been observed on various anticlines, where brittle strata, those called "incompetent" by the geologist, between thick masses of compact strata often show a much steeper dip than the latter, although the dip in both kinds of beds is in the same direction.

It will be noted that the Eagle Hill oil field has been discovered along the axis of this anticline in Survey 206; that Magnolia Petroleum Company brought in a gas well in Survey 96 on the axis; and that many oil wells have been completed near the axis of the fold in Surveys 361, 362, 363, in the Northwest Extension of the Government Wells field. The anticline appears, however, to be a different structure from the old line of production of the Government Wells area; and the writer does not know exactly what connection exists between them.

There has been much argument as to whether the accumulations in the Government Wells district are controlled by sand conditions or by structure. Lensing and porosity undoubtedly have much to do with controlling production; but the finding of oil on the Northwest Government Wells Faulted Anticline shows that real geologic structure also has a strong effect in determining the location of the oil and gas. In the writer's opinion, the oil and gas pools of the Government Wells region are controlled in general by a combination of structure and sand conditions. It is probably the unusual effects sometimes produced by faulting and anticlinal and synclinal folding superimposed on sand lensing which give origin to the eccentricities in production so common in northwestern Duval County. This could also cause the marked differences, noticed in some places, between the structure indicated by surface geology, and the subsurface structure shown by well logs.

The Loma Alto mesas, southeastern McMullen County, as seen from the west across the cactus and chaparral covered prairies.

Mechanics and Chemistry *Involved in Heaving Shale Problems'* Ultimate Solution

PART III—Probable Future Trends

BRAD MILLS
Associate Editor

TWO previous articles have been published on the problem of drilling through heaving shale. These appeared in *The Oil Weekly* of July 16 and 23. In this, the third and concluding article of the series, is discussed theories that have been advanced for its successful handling. It is through these ideas and further experiments that the important problem of heaving shale will be solved eventually.

A COMBINATION mechanical and chemical drilling method looks most promising as a possible solution to the heaving shale problem. Engineers inclined toward attacking the problem through a purely chemical channel are satisfied with present equipment, while those favoring the mechanical course are working to design more effective drilling equipment.

Drilling fluid will be the chief weapon of attack. Even the mechanically inclined engineers agree that mud characteristics must be controlled. Success of such mechanical methods as pressure drilling, carrying casing and reverse circulation depend largely upon conditioning of the drilling mud.

Two major Gulf Coast producing companies are searching for a drilling method that will prove effective where all previous efforts have failed. One of these companies is inclined strongly toward chemistry, but the other favors research along a combination involving improved mechanical design and chemical formulas. Several smaller Gulf Coast producing companies are studying intensively the heaving shale problem and in many instances have made wonderful progress. Humble Oil & Refining Company has been a leader in research work involving these problems, and has made considerable progress along both chemical and mechanical lines.

One of the main problems has been unsatisfactory identification of heaving shale. Limited amount of work done along this line has left the principal operators in dispute as to the nature and occurrence of these shales. Geologists, engineers, paleontologists and chemists do not agree on several important factors involved.

In attacking heaving shale, the average exponent of an improved mechanical drilling method contends there is little or no chemical change when water disturbs the dry shale. Parts of the shale may dissolve and other parts may be washed from the hole, but the theory of this school of thought holds to the claim that the dissolved portion simply becomes part of the mud and the undissolved portion remains to be washed from the hole or to cause trouble of some kind.

The fact that addition of chemicals has reduced or increased the volume of shale entering the hole tends to support the theory that a chemical change takes place and chemicals may be useful in checking the sluffing action. Shale samples have been examined and analyzed, but under different conditions than those prevailing in the hole. Reaction of these shales to various liquids was studied.

Pressure Drilling

Drilling under pressure is considered by several companies to be a promising method. Past attempts along this line have not been altogether successful, but progress was reported where other methods had failed. It has been difficult to design an outfit that would function under full pressure during short periods, such as changing bits and running casing.

A few pressure drilling methods, besides those already tried, are being considered. This does not include doubtful and impractical methods and ideas that run into the dozens.

Theoretically, a high drilling fluid pressure will prevent the shale from heaving into the hole, but engineers working along this line of thought know the danger of disturbing the wall of the hole when pressure is released for some reason. By holding a back pressure on the fluid column, a comparatively simple pressure system may be employed. Equipment for drilling and making changes while maintaining a steady pressure against the formation has possibilities.

A Victoria, Texas, engineer has designed a pressure drilling outfit that will require a second derrick floor about 20 feet above the lower floor. This method also requires carrying a full string of casing a short distance above bottom. A large surface string is cemented prior to use of this drilling arrangement to insure full and proper return of circulation inside this surface string.

A packer is used at the surface between the surface string and the casing string being carried, and also one is used between the string carried and the flush joint drill pipe. While drilling, the mud fluid passes through the drill pipe and returns between the string carried and wall of the hole. The drilling fluid may also return between the drill pipe and casing being carried. Pressure is controlled by the valve on the returning mud line and pump operation, while volume control is identical, except that viscosity is a factor.

While making or breaking drill pipe, the drilling fluid passes down between the carried casing and the drill pipe, and returns between the casing and wall of the hole. The exit is between the casing carried and the surface string, since the latter string is usually short.

Use of a second derrick floor places workmen in a position to feed casing into the hole as required, and to keep it in motion, up and down or through rotation. Pressure is maintained at all times, except during a short period of changing bits. A collapsible bit is required to drill a larger hole than the diameter of the casing carried. Optional return circulation between either the drill pipe and casing carried, or between the casing and wall of the hole has a decided advantage where the casing has a tendency to freeze or stick.

This double derrick floor plan features control of drilling

Drilling Cost is a matter of Distance... Distance is a matter of Direction

If it were possible for you to be lowered on a bailing line to the bottom of the drill hole, you couldn't tell so much about its direction as this instrument . . . . . It's called the

SYFO
Clinograph

(U. S. Patent 1,962,634 and others pending.)

SPERRY-SUN WELL SURVEYING COMPANY
1608 Walnut Street
PHILADELPHIA, PA.

DALLAS, TEXAS
1501 Munger Ave.

TYLER, TEXAS
Peoples Natl. Bank Building

TULSA, OKLAHOMA
402 Petroleum Building

HOUSTON, TEXAS
819 Esperson Building

LOS ANGELES, CALIF.
415 Petroleum Securities Building

fluid characteristics, maintenance of even back pressure, and circulation from bottom of hole during drilling and while going in or coming out of hole with drill pipe.

Controlled Directional Drilling

Two or three types of directional or controlled drilling are being considered in heaving shale belts. Rapid acceptance of this type of drilling has brought it to the front in many districts. Such a method seems exactly to fit conditions on several salt domes along the Texas-Louisiana Gulf Coast.

One of the problems along the flanks of several salt domes has been a troublesome shale body lying at an angle about midway between a vertical and horizontal position. In drilling vertically into these shale bodies, the formation has crumbled and fallen into the hole so violently that penetration has been impossible. The wall of the hole has been especially susceptible to drilling fluid, and great cavities have been made before the hole was entirely lost.

It is believed that by drilling a straight hole to a point above the shale body and whipstocking to cause the hole to cut the shale in a flat position, the tendency to disturb the walls of the hole will be greatly reduced, if not eliminated. This could be accomplished by locating the well at a greater distance from the top of the salt plug than would ordinarily be done. The drift would be toward the salt plug, as the shale bodies have been disturbed and pushed upward. Where the salt plug has tilted the shale body upward 20 degrees from the horizontal, it would be necessary to drill through this shale body at only 20 degrees from the vertical to cut it in a flat position. It may not be necessary to cut these troublesome shale bodies in exactly a flat position to make deviated drilling effective. A greater drift than 20 degrees from the vertical is possible.

In such fields as Barbers Hill and West Columbia, flank drilling has been difficult. On the shallower salt domes, deeper production has been difficult, due to disturbance of shale bodies by the salt plug.

Directional drilling, through use of whipstocks, seems to have another application where shale has been disturbed by the salt plug. A prominent controlled directional drilling expert who has been successful in both California and along the Texas-Louisiana Gulf Coast believes it feasible to drill to a certain level in the salt plug, and to use whipstocks in sending the hole into the producing formation below the heaving shale. In this manner the ragged ends of the shale streaks lying against the salt plug would be drilled around and eliminated. Such a drilling method should be useful where it is known or suspected that producing zones lie below heaving shale bodies.

The chief question about this method centers around the known difficulty of sidetracking, whipstocking and directional drilling in salt. Several companies have been unable to set whipstocks in salt, due to the washing away action at the seat of the trouble. One directional drilling expert claims he can drill to any desired level in the salt plug, and will be able to start the well drift in the correct direction to cause completion in the producing formation below the shale.

Casing and Cementing

A method proposed by a drilling superintendent of a producing company involves use of several strings of casing. He would run a very large string of casing as deep as possible and cement it in the usual manner. A smaller casing string with collapsible bit attached would then be run and drilling would continue as far as possible, using the casing as drill pipe. After sticking the casing or wearing out the bit, another casing string with bit attached would be run and drilling continued until the casing could be carried no farther. By repeat-

South flank at West Columbia. Heaving shale has been a serious problem in this area.

ing this operation, each time with a smaller casing string, it might be possible to drill through shale in some areas.

Such a method has several doubtful points, but it might be worth a trial where all methods have failed. The superintendent suggesting use of such a method thinks it might be possible to mill through the bit and make an opening that would accommodate the next size casing to be run. He also thinks it possible to use an adaptation of a wire line drilling-coring bit that already has been effective in drilling through heaving shale. Use of this type bit would permit changing blades and making additional hole in case the casing, which would be used as drill pipe had not stuck. The wire line bit may be attached either to drill pipe or casing, and might be used in connection with this method.

Use of so many casing strings might be practical where several companies pool their interests in giving the method a test in a field that has not been developed because of heaving shale. The cost would be very high, but successful penetration of the shale body and an important discovery would justify such an effort.

One Gulf Coast operator favors liberal use of cement, where the formation tends to form large cavities, or where the heaving shale has a known or limited thickness. He would drill and clean out for a short distance, fill the lower portion of the hole with cement, drill through the cement, make a limited amount of new hole, and dump cement again. This operation would be repeated until the shale body was penetrated, the idea of this drilling method being to pass through the shale and reach a lower objective with the equivalent of a string of cement casing.

A Gulf Coast drilling contractor is considering a combination rotary and cable tool drilling method for handling heaving shale. He plans to use regular rotary equipment until the shale becomes troublesome. Casing would be run and cable tools substituted. The cable drilling method requires little water, and the shale might not be disturbed by such a dry method. This contractor also believes the net result would be a smaller disturbance of the shale bodies. A very limited amount of fluid would be used, and a special bailer would remove the cuttings. Cable tools often handle formations not suited to drilling with rotary tools, but there is some question as to their effectiveness in working at great depths under excessive pressure. A special method of dumping water only in the bottom of the hole is being considered along with use of cable tools.

A petroleum engineer with a major Gulf Coast producing company favors use of an expanding bit and flush joint casing. He would carry the casing a very short distance above the bit, and would drill as rapidly as possible.

With this system, it would be necessary to cement a surface string to insure proper return of the fluid. A packer would be placed between the casing being carried and the surface string, and circulation would normally be down the drill pipe and up between the drill pipe and the suspended casing. It might be necessary to circulate occasionally between the casing being carried and the surface string to prevent the carried string from sticking. An opening would be provided in the packer that normally would be closed. In case of a sticking or freezing tendency, circulation would be changed to force the mud and cuttings up on the outside of the carried casing, instead of using the annular space between the drill pipe and casing string.

The expanding bit would be run on the drill pipe through the string of flush joint casing being carried. It would drill the desired size hole after finding bottom and being rotated in the conventional manner. Additional joints of flush joint casing would be run to keep the string a short distance above bottom.

This drilling method holds some promise for drilling through

QUICK SETTING OR QUICK HARDENING ?

LET'S GET THIS *Straight*

Don't let the terms "Quick-setting" and "Quick-hardening" confuse you when you specify the cement for your next well cementing job. Of course, *quick hardening* is important when cementing an oil well. But *quick setting* is dangerous and it may prove disastrous. Any cement sets more quickly under high temperatures and high pressures which exist in a well. Therefore, a cement which is abnormally quick setting under ordinary conditions, sets so quickly in a well, that any mishap which may cause a temporary shut-down, may allow it time to set before repairs can be made and operations resumed. Such situations are dangerous because cement which has taken its initial set and is then disturbed in forcing it into place, cannot produce a satisfactory job.

LONGHORN CEMENT sets and obtains a high early strength in ample time to meet the conditions encountered in cementing any well. It always assures a satisfactory job, and in no case will time be lost, since the Texas Railroad Commission has ruled that the plug cannot be drilled in any well for 72 hours. Moreover, with LONGHORN you save the difference over the extra cost of special cement . . . a difference which averages several hundred dollars per well. On top of that, it goes without saying that LONGHORN service goes with LONGHORN CEMENT . . . you get it where you want it, when you want it.

Proved!
FOR OIL WELL CEMENTING
Of the 151 wells completed in the Greta field from Oct. 1, 1933, to June 1, 1934, 50 were cemented with LONGHORN CEMENT . . . every one satisfactorily.

Write us . . . Let us show you other advantages of LONGHORN CEMENT.

REPUBLIC
PORTLAND CEMENT COMPANY
Smith Young Tower
SAN ANTONIO
TEXAS

a limited thickness of heaving shale, but in attempting to pass through up to 2000 feet of the formation, it might be difficult to keep the casing free. Return circulation between the suspended string and the wall of the hole would grow increasingly difficult as depth and bad heaving conditions become factors. The originator recommends it for drilling through up to 600 feet of shale, or where it is possible to drill from 100 to 300 feet before losing hole.

It would be possible to drill under pressure with this arrangement by using special top drill pipe connections and packing off between the casing and drill pipe. The carried casing would be moved up and down, and also rotated with a hydraulic table to prevent or lessen freezing. The method has not been tried in the Gulf Coast, although other attempts to carry casing have been made.

Further adaptation of the collapsible wire line bit, used in connection with casing as drill pipe, is favored by several Gulf Coast operators. This type of drilling, already considered a successful method in a number of heaving shale belts, may be slightly modified to meet special conditions. When used at Goliad, Texas, some time ago this type bit with 8⅝-inch casing as drill pipe bore the brunt of attack on the heaving shale, without special aid of drilling fluid.

Use of a collapsible wire line bit in connection with an improved drilling fluid has possibilities. Most of the drilling in the past with this type bit has been done with the expectation that mechanics alone was enough to solve the problem. The method should be used with drilling fluid of a type best suited to control of heaving shale, and not with mud mixed by guesswork.

Mud Fluids

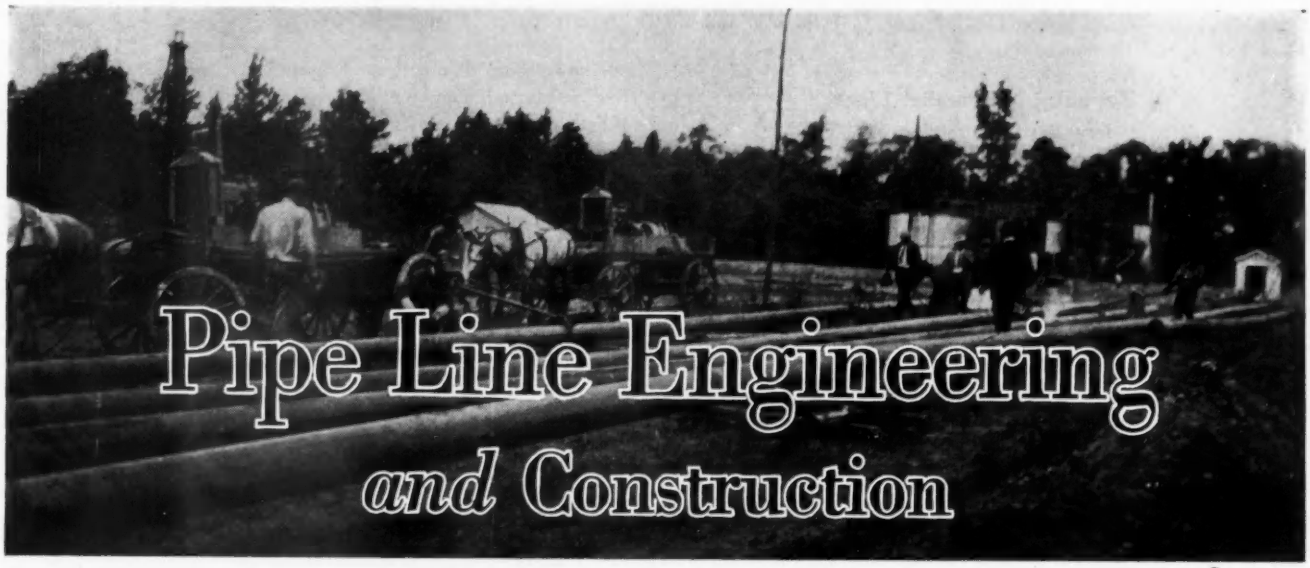
Gulf Coast chemists do not agree fully on the characteristics of heaving shale, and there are several theories as to its action upon meeting water. The methods of attack have been numerous, and several new chemical combinations are being considered. Mud mixtures containing iron oxides, barytes, bentonitic matter, caustic soda, sulfuric acid, sodium silicate, lime, amorphos silica, quebracho, sodium sulfate and other materials and chemical will be used in the future. All of those will not be used in one mixture, of course, but various combinations will be used in an effort to meet varying conditions.

A major company operating at Goose Creek is considering use of oil as a circulating medium after encountering heaving shale in a proposed deep test. An oil-water emulsion will also be part of the program. These mediums have been used in previous efforts to conquer heaving shale, but they will be used in connection with different mechanical methods. A collapsible wire line bit may be used with oil as a circulating medium.

A number of sealing compounds are being considered for use in sealing off fissures and cavities. Some have been used with success in several districts. Several patented drilling fluids, which might be classed as light chemicals, are under consideration by several companies. They will be useful as a base for experimentation with several stronger chemicals now finding favor.

In foreign fields, including those of South America and India, heaving shale has been attacked through mechanics, rather than through chemistry. Some attention has been given to drilling fluid, however, and petroleum engineers in these fields are concentrating on a combination mechanical and chemical method.

In conclusion, it is both wise and correct to state that no complete solution to the heaving shale problem has been found. No attempt has been made to discuss all methods that have been tried, nor has it been possible to describe all methods that will be tried. Possible chemical and mechanical methods are too numerous to consider separately, but the ultimate solution to the problem probably will be a combination of the two.



Formulas for Designing

Natural Gas Pipe Line Systems

Consisting of Parallel Lines[1]

T. W. JOHNSON[2] **and W. B. BERWALD**[3]

THE United States Bureau of Mines, in cooperation with the Natural Gas Department of the American Gas Association, has been studying actively for the past several years the flow of natural gas through high-pressure pipe lines.[4] This report deals with that part of the study involving the design of pipe-line systems consisting of lines laid parallel to each other. The lines are referred to as the original line and the parallel line. The paralleling line may or may not extend the entire length of the original line; however, the parallel line is connected at its two ends to the original line.

AS a result of the large expansion of the natural gas industry almost all markets within economic distance from the developed gas fields have at least one pipe line supplying them with natural gas. Small increases in the consumers' demand for natural gas can be met usually by increasing operating pressures, but any marked increase in demand necessitates paralleling sections of the existing systems. It is believed that to a large extent future expansion in the natural gas industry will consist of paralleling the present lines. The several formulas given in this report have been developed to aid in the design of such systems. Curves and tables were prepared from these formulas to simplify the calculations materially and to facilitate determination of the sizes of pipe to be used in paralleling various diameter lines to give the most economical design. The formulas are presented without detailed derivations, as a complete report on the flow of natural gas through pipe lines is being prepared which will contain the derivations of these formulas. Examples included here show the detail of application of the several formulas to problems of design of parallel lines.

The general study of the flow of natural gas through pipe lines was made under the supervision of H. C. Fowler, former acting chief engineer, and R. A. Cattell, chief engineer, Petroleum and Natural Gas Division, Bureau of Mines, and of N. A. C. Smith, supervising engineer, Bureau of Mines Petroleum Experiment Station, Bartlesville, Oklahoma.

The study of the flow of natural gas through pipe lines was made in cooperation with the pipe line flow committee, Natural Gas Department, American Gas Association. The members of this committee are: H. D. Hancock, H. L. Doherty & Company, chairman; G. H. Baird, Cities Service Gas Company; E. F. Schmidt, Lone Star Gas Company; R. W. Hendee, Oklahoma Natural Gas Corporation; E. A. Clark, Columbia Gas Company, Pittsburgh, Pennsylvania; T. R. Weymouth, Columbia Gas & Electric Corporation, New York; and E. L. Rawlins, Bureau of Mines.

Special thanks are due to E. L. Rawlins, Bureau of Mines, for assistance in deriving the formulas and to G. H. Baird, Cities Service Gas Company, for assistance in presentation of the data. The manuscript was reviewed also by H. P. Rue,

[1]Reprinted from U. S. Bureau of Mines, Report of Investigations 3241.

[2]Associate natural gas engineer, U. S. Bureau of Mines Petroleum Experiment Station, Bartlesville, Okla.

[3]Associate petroleum engineer, U. S. Bureau of Mines Petroleum Experiment Station, Bartlesville, Okla.

[4]Johnson, T. W., and Berwald, W. B., Flow of Natural Gas Through High-Pressure Transmission Lines: Rept. of Investigations 2942, Bureau of Mines, 1929, 18 pp.

Berwald, W. B., and Johnson, T. W., Factors Influencing Flow of Natural Gas Through High-Pressure Transmission Lines: Rept. of Investigations 3153, Bureau of Mines, 1931, 27 pp.

American Gas Association, Pipe Line Flow Subcommittee report to Main Technical and Research Committee on Investigation of the Flow of Natural Gas in High-Pressure Pipe Lines: Oct. 10, 1932, 420 Lexington Ave., New York.

E. S. Burnett, Gustav Wade, H. C. Miller, C. P. Bowie, and G. B. Shea, of the Bureau of Mines.

Formulas for Parallel Lines

The following formulas for solving problems relating to parallel lines are based on Weymouth's formula for the flow of gas through pipe lines[8].
This formula is,

$$Q = 18.062 \frac{T_0}{P_0} \left[\frac{(P_1^2 - P_2^2)\ d^{16/3}}{G\ T\ L} \right]^{1/2},$$

where,

- Q = volume, cubic feet per hour at temperature and pressure bases of T_0 and P_0,
- T_0 = temperature base, degrees Fahrenheit, absolute,
- T = temperature of flowing gas, degrees Fahrenheit, absolute,
- P_0 = pressure base, pounds per square inch, absolute,
- P_1 = inlet pressure, pounds per square inch, absolute,
- P_2 = outlet pressure, pounds per square inch, absolute,
- d = internal diameter of pipe, inches,
- G = specific gravity of gas (air = 1.00), and
- L = length of pipe, miles.

The following formulas are applicable under the conditions that after a section of the original line (or all it) has been paralleled, the temperature and specific gravity of the gas and the pressures at the inlet and outlet ends of the original line are the same as they were before paralleling.

Throughout the report the following notation is used:

- $\times$ = portion of length of original line paralleled, expressed decimally,
- d = internal diameter of original line, inches,
- d_1 = internal diameter of parallel line, inches,
- Q = volume of gas flowing through the system before paralleling, cubic feet per hour at base conditions of pressure and temperature, and
- Q_1 = volume of gas flowing through the system after paralleling, cubic feet per hour at base conditions of pressure and temperature.

The following formula is used to determine the portion of the entire length of line of a given diameter that must be paralleled with the same or a different diameter of pipe to increase the volume the desired amount.

$$\times = \frac{\left[\left(\frac{Q}{Q_1}\right)^2 - 1\right]}{\left(\left\{\frac{1}{\left[1 + \left(\frac{d_1}{d}\right)^{8/3}\right]^2}\right\} - 1\right)} \qquad \ldots\ldots\ldots (1).$$

Equation (1) may be rearranged to give an equation for the volume flowing through a system for any percentage of length of line paralleled with any diameter pipe.

$$Q_1 = \frac{Q}{\left[\times \left(\left\{ \frac{1}{\left[1 + \left(\frac{d_1}{d}\right)^{8/3} \right]^2} \right\} - 1 \right) + 1 \right]^{1/2}} \qquad \ldots\ldots (2).$$

[8]Weymouth, Thos. R., Problems in Natural Gas Engineering: Trans. Am. Soc. Mech. Engr., vol 34, 1912, pp. 185-231; also see references foot note 4.

TABLE 1

Percentage of length of original line that must be paralleled to give various percentage increases in delivery.

Increase in Delivery, percent	Values of ratio, $\frac{d_1}{d}$																	
	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0	M
1	12.8	7.8	5.4	4.1	3.4	2.9	2.6	2.4	2.3	2.2	2.2	2.1	2.1	2.0	2.0	2.0	2.0	1.97
2	25.3	15.3	10.6	8.1	6.6	5.7	5.2	4.8	4.5	4.4	4.2	4.1	4.1	4.0	4.0	4.0	4.0	3.88
3	37.5	22.6	15.7	12.0	9.8	8.5	7.7	7.1	6.7	6.5	6.3	6.1	6.0	6.0	5.9	5.9	5.8	5.74
4	49.3	29.8	20.6	15.7	12.9	11.2	10.1	9.3	8.8	8.5	8.2	8.1	7.9	7.8	7.8	7.7	7.7	7.55
5	60.6	36.6	25.4	19.4	15.9	13.8	12.4	11.5	10.9	10.4	10.1	9.9	9.8	9.7	9.6	9.5	9.5	9.29
7	82.6	49.9	34.5	26.4	21.6	18.7	16.9	15.6	14.8	14.2	13.8	13.5	13.3	13.2	13.0	13.0	12.9	12.65
10	.....	68.4	47.4	36.2	29.7	25.7	23.1	21.4	20.3	19.5	18.9	18.5	18.3	18.0	17.9	17.8	17.7	17.35
15	.....	96.1	66.6	50.8	41.7	36.1	32.5	30.1	28.5	27.4	26.6	26.1	25.6	25.3	25.1	25.0	24.8	24.38
20	.....	.....	83.5	63.7	52.3	45.2	40.7	37.8	35.7	34.3	33.4	32.7	32.1	31.8	31.5	31.3	31.1	30.56
30	.....	.....	.....	85.1	69.8	60.5	54.4	50.5	47.8	45.9	44.6	43.6	42.9	42.5	42.1	41.8	41.6	40.83
40	.....	.....	.....	.....	83.8	72.5	65.3	60.5	57.3	55.0	53.5	52.3	51.5	50.9	50.5	50.2	49.9	48.98
50	.....	.....	.....	.....	95.0	82.3	74.1	68.6	65.0	62.4	60.6	59.4	58.4	57.8	57.3	56.9	56.6	55.55
60	.....	.....	.....	.....	.....	90.2	81.3	75.3	71.3	68.5	66.5	65.1	64.1	63.4	62.8	62.4	62.1	60.94
70	.....	.....	.....	.....	.....	96.8	87.2	80.8	76.5	73.5	71.4	69.9	68.8	68.0	67.4	67.0	66.6	65.40
80	.....	.....	.....	.....	.....	.....	92.2	85.4	80.9	77.7	75.5	73.9	72.7	71.9	71.3	70.8	70.4	69.13
90	.....	.....	.....	.....	.....	.....	96.4	89.3	84.6	81.3	78.9	77.3	76.1	75.2	74.5	74.0	73.7	72.30
100	.....	.....	.....	.....	.....	.....	100.0	92.7	87.7	84.3	81.9	80.1	78.9	78.0	77.3	76.8	76.4	75.00
120	.....	.....	.....	.....	.....	.....	.....	98.0	92.8	89.2	86.6	84.8	83.5	82.5	81.8	81.2	80.8	79.34
140	.....	.....	.....	.....	.....	.....	.....	.....	96.7	92.9	90.2	88.3	86.9	85.9	85.2	84.6	84.2	82.64
160	.....	.....	.....	.....	.....	.....	.....	.....	99.7	95.8	93.0	91.0	89.6	88.6	87.8	87.3	86.8	85.21
180	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.1	95.2	93.2	91.8	90.7	89.9	89.3	88.9	87.25
200	.....	.....	.....	.....	.....	.....	.....	.....	.....	99.9	97.0	95.0	93.5	92.4	91.6	91.0	90.6	88.89
250	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.1	96.6	95.5	94.7	94.0	93.6	91.84
300	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98.6	97.5	96.6	96.0	95.5	93.75
350	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100.0	98.8	98.0	97.3	96.9	95.06
400	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	99.8	98.9	98.3	97.8	96.00
500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	99.6	99.1	97.22
600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	99.8	97.96
A	8.7	15.8	25.6	38.6	55.2	75.5	100.0	128.9	162.6	201.3	245.3	294.8	350.2	411.7	479.4	553.8	635.0	.....

d=internal diameter of original line, ins.; d_1=internal diameter of parellel line, ins.
M=minimum percentage of length of original line that must be paralleled for given percentage increases in delivery, (at which the value of d_1/d is infinitely large).
A=percentage increase in delivery when entire length of original line has been paralleled, for various d_1/d ratios.

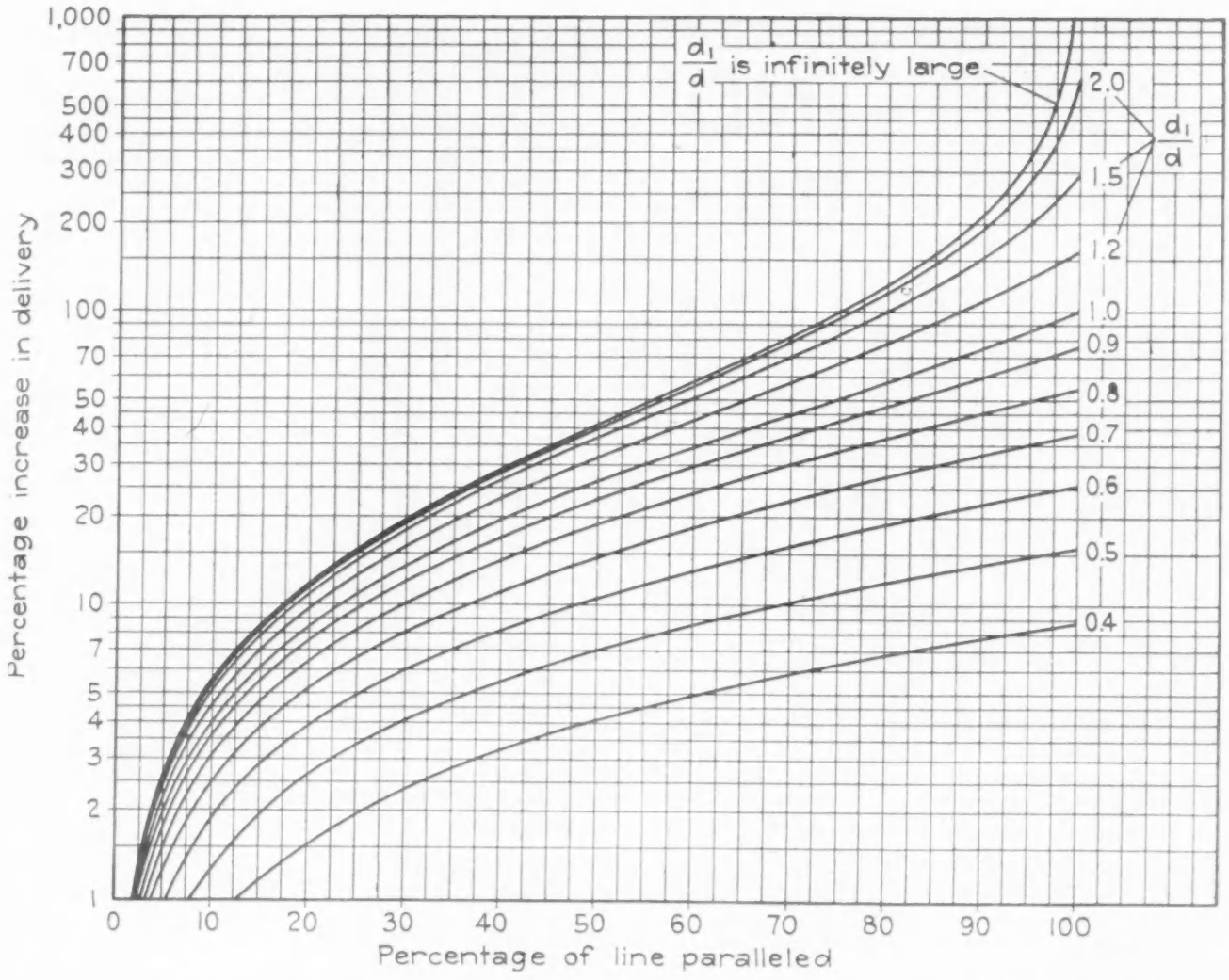


FIGURE 1—Relationship between percentage increase in the delivery and percentage of the original line paralleled for different values of $\frac{d_1}{d}$

Note d_1=internal diameter of parallel line; d internal diameter of original line.

Equation (1) may be rearranged also to give an expression for the diameter of the paralleling line that will be required to increase the flow of gas a given amount for a given portion of line paralleled.

$$\frac{d_1}{d} = \left(\left\{ \frac{\times}{\left[\left(\frac{Q}{Q_1} \right)^2 - 1 + \times \right]} \right\}^{1/2} - 1 \right)^{3/8} \quad \ldots\ldots (3.)$$

When the value of $\times$ is 1, or, in other words, when the entire length of the original line has been paralleled, the following relationship may be written,

$$\frac{Q_1}{Q} = \left[1 + \left(\frac{d_1}{d} \right)^{8/3} \right] \quad \ldots\ldots\ldots (4.)$$

That is, when the entire length of the line has been paralleled, the ratio of the volume after paralleling to the volume before paralleling is equal to 1 plus the eight-thirds power of the ratio of the diameter of the parallel line to the diameter of the original line.

When the diameters of the original and parallel line are the same, equations (1) and (2) simplify to,

$$\times = \frac{4}{3} \left[1 - \left(\frac{Q}{Q_1} \right)^2 \right] \quad \ldots\ldots\ldots\ldots (5.)$$

and,

$$\frac{Q_1}{Q} = \frac{2}{\left(4 - 3\times \right)^{1/2}} \quad \ldots\ldots\ldots\ldots\ldots\ldots (6.)$$

Examples Showing Use of Formulas

The following examples are given primarily to show application of equations 1, 2, and 3.

Problem 1: Given a pipe line 75 miles long, internal diameter (I.D.) 19.4 inches, delivering 40,000,000 cubic feet of gas per day. It is desired to increase the delivery to 50,000,000 cubic feet per day by paralleling a section of the line with 17.5-inch (I.D.) pipe while maintaining the same inlet and outlet pressures on the system. Find the length of the original line that must be paralleled.

Substituting in equation (1),

$$\times = \frac{\left(\frac{40{,}000{,}000}{50{,}000{,}000} \right)^2 - 1}{\left\{ \frac{1}{\left[1 + \left(\frac{17.5}{19.4} \right)^{8/3} \right]^2} \right\} - 1} = \frac{(0.8)^2 - 1}{\left\{ \frac{1}{\left[1 + 0.7597 \right]^2} \right\} - 1}$$

$$\times = \frac{-0.36}{0.3229 - 1.000} = 0.532$$

Thus, it is necessary to parallel 53.2 percent, or 39.9 miles of

YOUR KIND of fittings

No Compromise with Quality

ONLY TAYLOR FORGED FITTINGS COMBINE THESE

6

Points of Superiority

1 **SAFER** because of full wall thickness **PLUS** added reinforcement in the regions of greatest stress.

2 **THICKENED AT THE CROTCH** proven by highest engineering authority to be region of greatest strain.

3 **TANGENTS PERMIT STRAIGHT-AWAY WELDING** removing the weld from the curved section.

4 **LATHE BEVEL** assures clean, accurate welding surfaces, and enables high grade welding at top speed.

5 **FULL INSIDE DIAMETER** — full center to end measurement . . . true radius . . . perfect circle ends.

6 **FORGED AND FORMED SEAMLESS.** Compact and dense grain structure. No internal stress; no thinning or buckling.

The

CORBETT CORPORATION

2418 Winter Street
Phone Capitol 5327
Long Distance 363

HOUSTON • TEXAS

Texas Distributors for
TAYLOR FORGE & PIPE WORKS

QUICK DELIVERY FROM COMPLETE STOCKS

the original 75-mile line, to increase the delivery from 40,000,000 to 50,000,000 cubic feet, using 17.5-inch pipe.

Problem 2: Given a pipe line 50 miles long, internal diameter (I. D.) 12.25 inches, delivering 25,000,000 cubic feet of gas per day. If 20 miles of the length is paralleled with 15.5-inch I. D. pipe and the same inlet and outlet pressures are maintained on the system, find the delivery from the system after the section is paralleled.

Substituting in equation (2),

$$Q_1 = \frac{25{,}000{,}000}{\left[0.4\left(\left\{\frac{1}{\left[1+\left(\frac{15.5}{12.25}\right)^{8/3}\right]^2}\right\}-1\right)+1\right]^{1/2}} =$$

$$\frac{25{,}000{,}000}{\left[0.4\left\{0.1212-1.0\right\}+1\right]^{1/2}},$$

$$Q_1 = \frac{25{,}000{,}000}{(-0.3515+1.0)^{1/2}} = 31{,}044{,}000 \text{ cubic feet.}$$

Thus the delivery is increased to 31,044,000 cubic feet per day, or there is a gain of 24.2 percent.

Problem 3: Given a pipe line 70 miles long, internal diameter (I.D.) 19.5 inches, delivering 45,000,000 cubic feet of gas per day. It is desired to increase the delivery to 63,000,000 cubic feet per day, or by 40 percent, by paralleling 42 miles (60 percent of the length) while maintaining the same inlet and outlet pressures on the system. Find the required diameter of the parallel line.

Substituting in equation (3),

$$\frac{d_1}{d} = \left(\left\{\frac{0.6}{\left[\left(\frac{45{,}000{,}000}{63{,}000{,}000}\right)^2 - 1.0 + 0.6\right]}\right\}^{1/2} - 1\right)^{3/8} =$$

$$\left(\left\{\frac{0.6}{0.5102 - 1.0 + 0.6}\right\}^{1/2} - 1\right)^{3/8},$$

$$\frac{d_1}{d} = (2.3335 - 1.0)^{3/8} = 1.114.$$

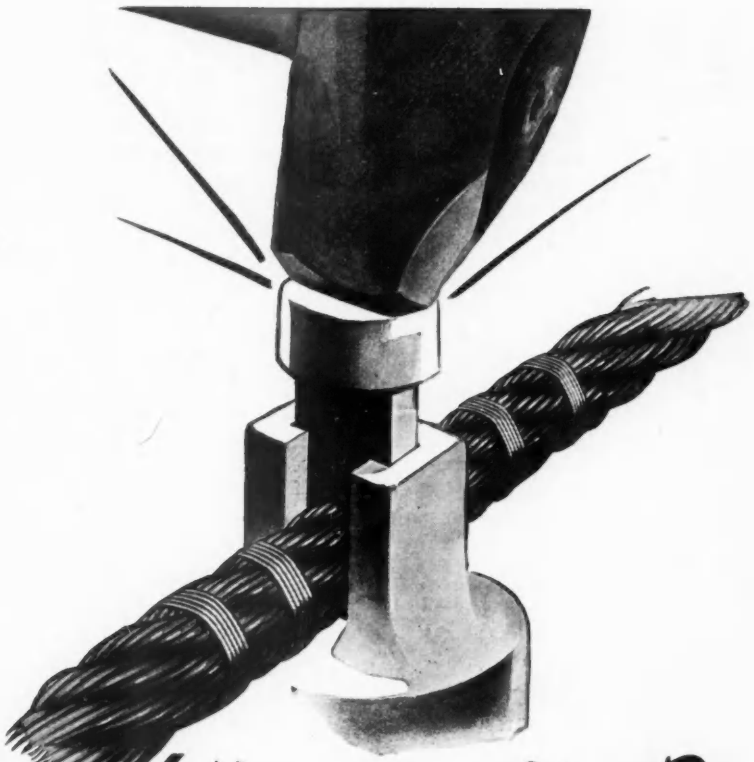
From which,
$d_1 = 19.5\ (1.114) = 21.7$ inches, internal diameter of the parallel line.

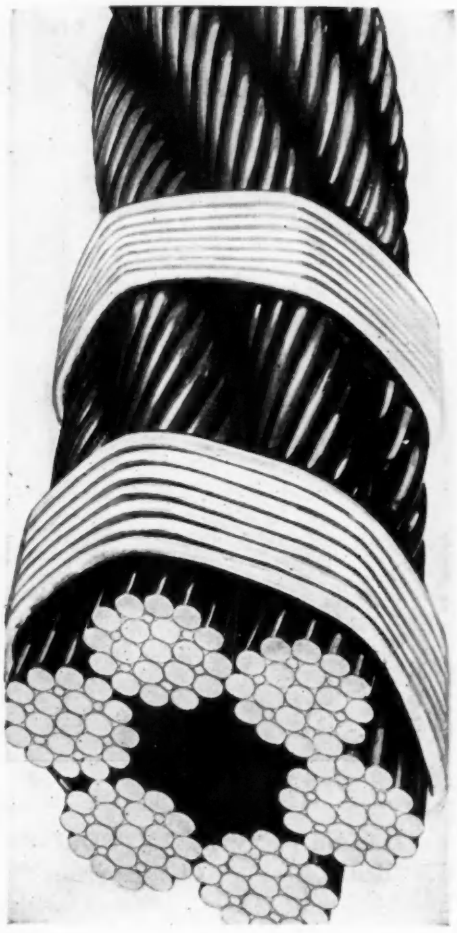
In the actual design of the line a 22-inch O.D. pipe with a wall thick enough to withstand the line pressure with a reasonable safety factor would be used.

Design of Parallel Lines

The percentages of length of line that must be paralleled to give various percentage increases in gas delivery are shown in Table 1 for different ratios of the diameter of the parallel line to the diameter of the original line. The curves in Figure 1 are plotted from these data and show the nature of the relationship expressed by equations (1), (2), and (3). Some interesting factors and comparisons pertaining to the design of parallel systems are brought out by the equations and by the curves in Figure 1.

The preceding formulas for calculating problems in the design of parallel lines eliminate the numerous computations of the "trial-and-error" methods commonly used. Furthermore, a table or a series of curves similar to those in Figure 1 (based on the equations presented in this report) will serve the purpose almost as well as calculations made by the formulas and will reduce materially the time required to design parallel lines. For example, in problem





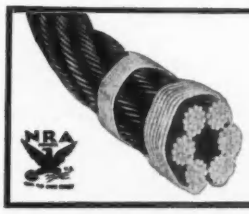
When cutting Wire Rope
Seizing is important!

Know your Ropes ...This is a helpful hint, how to make wire rope last longer. Subsequent Wickwire Spencer advertisements in this publication will give other dollar saving information. Tell us about your rope problem and we will give you the answer.

Preformed as well as standard lay wire ropes should be properly seized before cutting. Inadequately or loosely bound ends result in distortion and flattening when cut. Such distortion loosens the strands at both cut ends. When a rope so mutilated is later attached and put in tension by use, the load is borne unequally by the several strands within the rope. Tight, adequate seizing prevents this flattening and distortion. It gives a rope its rightful chance of long life. Because every part of the rope may be loaded equally, every strand is permitted to do its share of the work.

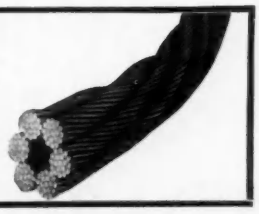
WICKWIRE SPENCER STEEL COMPANY, New York City, Buffalo, Chicago, Worcester; *Pacific Coast Headquarters:* San Francisco; *Warehouses:* Portland, Los Angeles, Seattle. *Export Sales Dept.,* New York City.

WIRE ROPE
by Wickwire Spencer



BOTH...STANDARD LAY AND WISSCOLAY PREFORMED.

Wickwire Spencer manufactures all sizes and types of Wire Rope in standard lays and preformed. Wisscolay preformed wire rope will often solve a wire rope application difficulty. Ask our engineers where and when it should be used. Send for a free WIRE ROPE BOOK. It will prove of great value.



REVERSIBLE

WILLIAMS' "VULCAN BOLL-WEEVIL" is a REVERSIBLE tong. Change from "making-up" to "breaking-out" (or vice-versa) without even unhooking the chain. Merely engage rear, or forward teeth and operate handle in the desired direction.

You don't have to hold up the "Boll-Weevil" to apply it, either. It is laid on top of the pipe and the chain is then hooked around. Here's a tool that's easy to use and is simple in construction—only six parts. The "I-Beam" handle provides extreme strength.

Every chain is proof-tested and CERTIFIED. Replacement chains are interchangeable, size for size, with chains for the other three patterns of Williams' "Vulcan" Tongs.

Four sizes handle pipe ¾ to 12 inches. Buy from your distributor.

J. H. WILLIAMS & CO.

"The Drop-Forging People"

73 SPRING STREET **NEW YORK**

NRA WE DO OUR PART

Western Warehouse and Sales Office: Chicago
Works: Buffalo, N. Y.

SEE OUR DESCRIPTIONS IN THE COMPOSITE CATALOG

WILLIAMS
SUPERIOR DROP-FORGED TOOLS
VULCAN BOLL-WEEVIL
REVERSIBLE TONGS

3 the computed internal diameter of the parallel line is a size not regularly manufactured, and in practice a 22-inch outside-diameter (O.D.) pipe of sufficient wall thickness would be selected; another calculation must then be made, using equation (1) with the correct internal diameter of the 22-inch pipe to determine the actual length of the parallel line. The number of calculations in problems of this type would be materially reduced by the use of the curves in Figure 1. Another advantage in the use of such a series of curves is that for any immediate increase in gas delivery the length of the parallel line necessary for different $\frac{d_1}{d}$ ratios is obtained readily, and from the $\frac{d_1}{d}$ curves the additional length of the parallel line necessary for estimated future increases in gas demand can be determined with ease.

From equation (3) the minimum portion (expressed decimally) of the length of the original line that must be paralleled for any desired increase in volume equals the arithmetical value of the quantity

$$\left[\left(\frac{Q}{Q_1}\right)^2 - 1\right]$$

, and for this condition the diameter of the parallel line is infinitely large. The column of figures under letter M in Table 1 and the curve in Figure 1 for a ratio of $\frac{d_1}{d}$ infinitely large give the minimum percentage of the length that must be paralleled to obtain specific increases in delivery; however, for this condition the diameter of the parallel line is infinitely large. In other words, for real conditions the percentage of the length of the original line that must be paralleled by another line for a specific increase in delivery is greater than the value given under M in Table 1 or by the curve in Figure 1 for a $\frac{d_1}{d}$ ratio infinitely large.

The figures at the bottom of Table 1 following A are the percentage increases in delivery attained by paralleling the entire length of a line for different ratios of internal diameter of parallel line (d_1) to internal diameter of original line (d). Obviously for a $\frac{d_1}{d}$ ratio of 1 (parallel line same diameter pipe as original line) the delivery is increased 100 percent when the entire length has been paralleled. This same $\frac{d_1}{d}$ ratio requires paralleling of 74.1 percent of the length of the line to increase the delivery of gas by only 50 percent.

Economics of Parallel-Line Systems

A group of curves similar to those in Figure 1 illustrate the economic advantages of certain types of design in parallel pipe lines. The following discussion and examples bring out some of the factors to be considered.

For the small values of $\frac{d_1}{d}$ (ratio of diameter of parallel line to original line), an increase in the value of $\frac{d_1}{d}$ reduces materially the length of the parallel line required for any desired increase in delivery. However, for increasing values of $\frac{d_1}{d}$ the amount of change in the length of

TABLE 2

Costs of increasing the gas delivery by using different diameter parallel lines. (Table based on original line 100 miles long and 15.432 inches I.D. pipe).

Diameter of parallel line, inches		Cost of line per mile	$\frac{d_1}{d}$	For 20 percent increase		For 50 percent increase	
External	Internal			Length of Parallel line, Miles	Cost of Parallel Line	Length of Parallel line, Miles	Cost of Parallel Line
22.000	21.250	$30,000	1.377	33.56	$1,006,800	61.00	$1,830,000
20.000	19.378	25,000	1.256	34.90	872,500	63.45	1,586,200
16.000	15.432	20,000	1.000	40.75	815,000	74.08	1,481,600
12.750	12.188	15,000	.79	53.21	798,200	96.74	1,451,100
10.750	10.250	12,000	.664	69.53	834,400	.....	.....

the parallel line, with change in the $\frac{d_1}{d}$ ratio, decreases. For instance, to increase the delivery 10 percent (see Table 1) it is necessary to parallel a 10-inch internal diameter (I.D.) line for 47.4 percent of its length using 6-inch I.D. pipe ($\frac{d_1}{d} = 0.6$), 29.7 percent of its length using 8-inch I.D. pipe ($\frac{d_1}{d} = 0.8$), 18.9 percent of its length using 14-inch I.D. pipe ($\frac{d_1}{d} = 1.4$), and for 16-inch I.D. pipe ($\frac{d_1}{d} = 1.6$) the percentage of line parallel decreases to only 18.3; for still larger values of the ratio $\frac{d_1}{d}$ the percentage of the original line required to be paralleled decreases gradually to a minimum value of 17.35, and for this percentage the diameter of the parallel line is infinitely large. In other words, for a 10 percent increase in delivery of gas a percentage of the length of the original line greater than 17.35 must be paralleled, and if the ratio of the diameter of the parallel line to the diameter of the original line is two it is necessary to parallel 17.7 percent of the length.

The following examples illustrate a method of analysis of the economics of various designs of parallel lines. The costs per mile of different diameter lines employed in the examples are average values and should be used with caution when applied to specific installations. Variations in cost of labor and materials and in topography of the right-of-way preclude any definite cost figures. However, the costs per mile used for different diameter lines are comparable and for the purpose of the following analysis are accurate enough to indicate certain general trends in the economics of the design of parallel lines.

The problem is to determine the cost of increasing the delivery of a pipe line 100 miles long of 15.432 inch I. D. pipe by 20 and 50 percent, using different-diameter parallel lines. Table 2 shows the length of the parallel line required and its cost, using 22-, 20-, 16-, 12.75-, and 10.75-inch pipe.

The general trend (Table 2) is a decrease in cost as smaller-diameter lines (necessitating paralleling more of the entire length of the original line) are used. However, for the 20-percent increase in gas delivery and for the particular cost figures used the cost of the 10.250-inch I.D. parallel line is slightly more than the cost of the project using 12.188- or 15.432-inch I.D. pipe. For the 20-percent increase in delivery the 16-inch line probably would be the best size to use, since its cost is considerably less than that of the 22- or 20-inch lines and about the same as that of the 12.75- or 10.75-inch line. Furthermore, the 16-inch diameter parallel line has several advantages over the 12.75- and 10.75-inch lines, chiefly in that the shorter length of the 16-inch line that would be required, compared to the length of either of the two smaller sizes, allows more freedom in extending the parallel line to take care of future increases in gas demand. The shorter length of line also has the advantage of lower maintenance expense.

From Table 2 the cost of the 50-percent increase in gas delivery, using the same diameter parallel lines, is proportionately much less than the cost of 20 percent increase in delivery. To illustrate, using 22-inch pipe the average cost of each percent increase for the 20 percent increase in delivery is $\frac{1,006,800}{20} = \$50,340$, whereas the cost of each per-cent for the 50 per cent increase in delivery is $\frac{1,830,000}{50} = \$36,600$.

Summary

The formulas presented in this report are derived from Weymouth's formula for the flow of natural gas through pipe lines. The use of these formulas, along with a series of curves as shown in Figure 1, aids materially in the calculation of problems dealing with the design of parallel lines. Examples are given in the report to show the application of the formulas. Some of the economics involved in the design of parallel lines (as indicated by the formulas) are discussed, together with examples based on comparative cost data. However, for any particular gas-transmission system other factors than those considered may enter into a determination of the most economical design of parallel lines. For instance, only a limited length of the pipe line right-of-way may be easily accessible and satisfactory for laying pipe lines, whereas the remainder of the pipe line may transverse swamps, mountains, or areas of corrosive soil, where the cost of construction and maintenance is much higher and paralleling this section may not be economical.

OIL INDUSTRY
PUMPS
Made by
OIL INDUSTRY MEN
for
OIL INDUSTRY
Service
They're made in the heart of the oil country to stand the gaff of oil industry use. Back of them is a firmly established, responsible company organized to render the type of service the oil industry requires. Isn't it logical, under those conditions, that an ever-increasing group of oil men should insist upon them?
Wherever oil is found the word GASO is accepted as an unfailing symbol of pump service, pump life and pump economy.
Gaso Pump & Burner Mfg. Company
902 E. First St., Tulsa, Oklahoma
Export Office: 149 Broadway, N. Y.
GASO
FULL-AUTOMATIC
FIELD PUMPING
UNIT
UTILIZING GAS
OR
GASOLINE DRIVE
GASO
GASO PUMPS
for every oil industry need

MARKETS — STATISTICS

Despite continued production of "hot" oil in East Texas, which is undermining otherwise favorable conditions for improved prices, general market prices remain firm; but there is uncertainty whether current quotations can stand up. Pacific Coast markets are in healthy condition. Crude production situation is relatively favorable as several states cut allowables.

Markets Continue on Higher Ground But Are Unsteady

PETROLEUM product prices continued on relatively high ground last week, and in some areas there were slight advances. But there was considerable uncertainty and doubt as to whether or not current quotations could stand up under various undermining influences, and both wholesale and retail markets were inclined to unsteadiness.

On the Pacific Coast the gasoline retail markets were in generally healthy condition, and wholesale prices were firm, with very little "hot" oil being produced in the state. The Pacific Coast marketing plan has been largely responsible, of course, for the favorable situation in that area. The plan involves purchase of sulphur gasoline by major companies and obligation of small refiners to observe code quotas and to process only legally produced crude. It also involves sale of gasoline at the same prices by all companies, major and independent.

The provisions of the plan were being generally adhered to, despite anticipations that it would be difficult to keep idependents from cutting prices below the fixed levels. There were, however, some filling stations and a few refineries who were fulfilling those anticipations by offering under-priced material; and it was evident that any increase in the selling below established prices might seriously jeopardize the markets.

In the Mid-Continent the markets were largely dominated as usual by developments in East Texas, where a gasoline market stabilization plan similar to that for the Pacific Coast was put in effect early in July. Big company purchases of surplus gasoline is a leading feature of the plan, and such buying has boosted East Texas gasoline prices about three eighths of a cent a gallon at the refineries. Advances of quotations were arrested around the middle of July, however, and last week conditions were not such as to promote further gains. Third grade continued to sell around 3⅝ cents a gallon, middle grade at 4¼ cents and first grade at 4½ cents.

Group Three prices, however, were an eighth-cent higher early in the week than they had been in the closing part of the previous week, with third grade up to 4 cents a gallon on the average, middle grade at 4⅝ cents, and top grade at 4⅞ cents.

Despite the East Texas market stabilization plan, "hot" oil continued to be produced in the area at rates around 75,000 barrels daily, it was estimated; and it was reported that some independent refiners who had entered into the plan were not only violating their agreement not to run more "hot" oil but also were violating gasoline production quotas assigned them by the oil administration. This "chiseling" was of course tending to hold down refinery prices, and the Mid-Continent retail markets were unsteady in sympathy.

In the Chicago area retail gasoline price wars were recently terminated with assistance of the oil administration, but there was considerable doubt as to whether or not the improvement would prove lasting. Major companies agreed to sell gasoline one cent higher than "such independents as the trackside operators whose stations are near railroad sidings." Some majors believed only actual trackside operators should be allowed the price advantage, but all independents interpreted the settlement as authorizing them to post prices one cent lower than majors on regular gasoline and one half cent lower on third grade.

The competitive war was consequently continued, although at higher price levels, and the large companies appeared foredoomed to lose substantial gallonage under the new price setup. While it appeared possible the major companies might accede to the situation during the current large consumption period, it was recognized they might be forced to take steps to protect their interests when consumption begins declining after the summer peak period. There was a more immediate threat to the price structure, moreover, in the circumstance that some major company dealer stations, actually controlled by the dealers, might revolt and meet the independents' lower postings.

Gasoline price wars have been widespread throughout the country in recent months, greatly interfering with earnings possibilities in the oil industry, and in recognition of this fact, the oil code administration last week took steps which may afford relief from such wars. The Planning and Coordination Committee was authorized to set up local committees when and if

THE OIL WEEKLY

Estimated Average Daily Production of Crude Oil, Barrels.

District or State	Week Ending July 28	July 21
TEXAS—		
Texas Panhandle	60,000	61,500
North Texas	58,500	58,000
West Central Texas	27,100	27,000
West Texas	146,000	148,000
East Central Texas	51,000	51,000
East Texas Field	469,000	466,000
South Texas	57,500	55,000
Texas Gulf Coast	170,000	170,000
Total Texas	1,039,100	1,036,500
OKLAHOMA—		
Oklahoma City	154,600	190,135
Seminole Area	124,835	129,450
Tatums	6,500	7,050
Lucien	6,070	8,475
Others	199,720	198,565
Total Oklahoma	491,725	533,675
KANSAS—		
Ritz-Canton	14,800	14,930
Voshell	6,965	6,750
Nikkel-Hollow	17,135	17,655
Sedgwick	7,150	7,050
Others	90,700	89,140
Total Kansas	136,750	135,525
LOUISIANA—		
North Louisiana	24,875	25,000
Louisiana Gulf Coast	70,000	70,000
Total Louisiana	94,875	95,000
ARKANSAS	31,500	31,500
CALIFORNIA—		
Long Beach	67,000	67,500
Santa Fe Springs	40,000	41,500
Huntington Beach	49,500	47,500
Dominguez	18,000	19,500
Inglewood	10,000	10,000
Ventura Avenue	28,000	28,000
Seal Beach	7,000	7,000
Midway-Sunset	56,000	57,000
Elwood	11,000	11,000
Kettleman Hills	72,000	76,000
Playa del Rey	9,000	9,000
Others	148,500	156,000
Total California	516,000	530,000
MOUNTAIN STATES—		
Wyoming	36,500	36,000
Montana	8,700	8,500
Colorado	3,500	3,500
Total Rocky Mountain States	48,700	48,000
NEW MEXICO	48,500	48,300
EASTERN STATES	104,000	105,000
MICHIGAN	31,000	32,000
Total United States	2,542,150	2,595,500

price wars arise and to endeavor to negotiate prompt settlement of the disagreements involved.

Another development of last week which may have a favorable influence on the oil markets ultimately was the oil administration's promulgation of new oil control regulations to supersede those originally issued a year ago when the federal government first entered the oil regulation picture. The new "hot" oil regulations will require more detailed information from producers, refiners, and carriers; and in connection with them oil law violators will be subjected to the more severe penalties of the new criminal code law as well as to penalties provided in the NIRA. Some improvement in crude production control is expected to result.

It is possible also that markets will benefit during August from the reduced crude oil and gasoline production allowables ordered by the oil administration. The cuts were ordered in the hope of bringing down surplus stocks of gasoline.

Crude Production Situation Remains Relatively Favorable

THE crude oil production situation in the United States has continued favorable, except for the persistent output of "hot" oil in East Texas in substantial volume. While the outlook was improved by setting of lower allowable for August by federal and state oil control agencies, actual conditions were also better last week, with the nation adhering more closely to allocations.

For the week ending July 28 United States crude production is indicated to have averaged 2,542,150 barrels daily, or only about 12,000 barrels per day more than market requirements as estimated by the oil administration, the national allowable for July having been 2,530,300 barrels daily. The country had not had so favorable a record in the previous week, when the allowable was exceeded by about 65,000 barrels daily.

The above figures are all exclusive, however, of "hot" oil, and since illegal production has continued relatively high with most of it in East Texas, the actual excess above authorized output has been substantially greater than figures just indicated. For the past two weeks East Texas "hot" oil has been averaging between 60,000 and 80,000 barrels daily, it is estimated.

Orders of the oil administration call for national production of only 2,449,300 barrels daily during August, or 81,000 barrels less than in July. In cognizance of that lower allowable, the Texas Railroad Commission ordered that state's allowable reduced 30,000 barrels under the quota assigned to it, thus contributing toward achievement of the goal sought by the oil administration. The relatively large cut ordered by the administration was based on a similar reduction of the national gasoline production allowable, aimed at cutting down surplus gasoline stocks.

For the week of July 28 the 53,000-barrel decline in daily production resulted from a sharp drop in Oklahoma and a moderate reduction in California.

Oklahoma production declined to 491,725 barrels daily, or within about 2000 barrels of the state allowable, from 533,675 barrels per day the previous week. That 42,000-barrel drop was possible through sharp curtailment in the Oklahoma City field and a moderate decline in the Seminole area.

Kansas production was up 1000 barrels from the previous week, but exceeded the 134,500 barrel daily allowable by only 2250 barrels.

California exceeded its allowable only 6600 barrels in averaging 516,000 barrels daily for the week of July 28. The state's output had been 530,000 barrels daily the week before.

The accounted-for production in Texas for the week of July 28 averaged 1,039,100 barrels daily, or about 3000 barrels more than for the previous week. The state's federal allocation for July was 1,042,100 barrels daily. Thus the Texas reported production was within the allowable. But as indicated above, around 75,000 barrels per day of "hot" oil was being produced in excess of reported production, it is estimated.

How Production Compares with Federal Allocation

	Allocation July	Week Ending July 28[1] Daily Average		4 Weeks, July 21[2] Daily Average	
Arkansas	33,000	31,500	−1,500	31,750	−1,250
California	509,400	516,000	+6,600	521,500	+12,100
Kansas	134,500	136,750	+2,250	133,300	+1,200
Louisiana	88,900	94,875	+5,975	94,700	+5,800
Texas	1,042,100	1,039,100	−3,000	1,051,200	+9,100
Oklahoma	489,500	491,725	+2,225	525,050	+35,550
New Mexico	46,600	48,500	+1,900	48,650	+2,050
Rocky Mountain	44,200	48,700	+4,500	48,600	+4,400
Appalachian States	108,900	104,000	−4,900	101,800	−7,100
Michigan	33,200	31,000	−2,200	30,900	−2,300
United States	2,530,300	2,542,150	+11,850	2,587,450	+59,550
Imports crude and fuel oil				137,929	
Crude to Stills[2]				2,537,500	

[1]Oil Weekly estimate for current week. [2]A. P. I. estimate.

Oklahoma Markets Are Improving

MID-CONTINENT market observers were in the most optimistic mood that has been found in several weeks as jobbers apparently had come to the conclusion that prices have reached bottom and are due for an upward swing under the influence of several favorable factors. Among these

Crude Runs to Stills; Finished and Unfinished Gasoline; Gas and Fuel Oil Stocks; and Cracked Gasoline Production, Week Ended July 21, 1934

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(a) Stocks of Unfinished Gasoline	(b) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys., Term., etc.				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	582	582	100.0	494	84.9	5,676	9,473	15,149	1,158	222	10,297	496	471	95.0	79
Appalachian	150	140	93.3	106	75.7	834	720	1,554	287	167	1,048	69	69	100.0	28
Ind., Ill., Ky	446	422	94.6	346	82.0	4,819	2,727	7,546	1,245	45	3,961	325	309	95.1	92
Okla., Kans., Mo	461	386	83.7	257	66.6	3,184	1,772	4,956	707	560	3,498	256	238	93.0	65
Inland Texas	351	167	47.6	104	62.3	1,040	93	1,133	254	463	1,553	82	66	80.5	26
Texas Gulf	566	552	97.5	504	91.3	3,777	241	4,018	1,658	216	7,805	358	355	99.2	97
Louisiana Gulf	168	162	96.4	96	59.3	794	580	1,374	206	5	1,789	71	71	100.0	22
North La.,—Ark	92	77	83.7	59	76.6	224	21	245	83	28	534	41	38	92.7	10
Rocky Mountain	96	64	66.7	39	60.9	854	.....	854	132	38	624	46	42	91.3	11
California	848	822	96.9	426	51.8	10,863	1,489	12,352	1,017	2,356	78,099	209	209	100.0	53
TOTALS WEEK: July 21, 1934	3,760	3,374	89.7	2,431	72.1	32,065	17,116	49,181	6,747	4,100	109,208	1,953	1,868	95.6	483
July 14, 1934	3,760	3,374	89.7	2,406	71.3	32,113	*17,404	49,517	6,760	4,100	108,914	1,953	1,868	95.6	481

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week, July 21, 1934 compared with July 1933 Bureau figures.

Estimate B. of M. Basis July 21, 1934	2,590		520
Estimate B. of M. Basis July 14, 1934	2,565		515
U. S. B. of M. July 1933: Daily Average Crude Runs	2,565	U. S. B. of M. July 1933: Daily Average Cracked Prod.	549

(a) Amount of unfinished gasoline contained in naphtha distillates.
(b) Estimated. Includes unblended Natural Gasoline at refineries and plants; also blended Motor Fuel at plants.
*On new basis—Stocks in Ind., Ill., Ky. totaling 300,000 barrels have been reclassified.

was the improved situation in the East Texas area. Prices were expected to improve with the opening of the coming week.

Although there was some disagreement as to prices a concensus of opinion in Tulsa revealed the following as representative of Group 3, Oklahoma, exclusive of taxes:

Refinery Gasolines: Third grade U. S. Motor, 59 and below octane rating, 3⅞ to 4⅛ cents; middle grade or 59 to 64 octane rating 4½ to 4¾ cents; premium grade or 65 and above octane rating, 4¾ to 5 cents; 60-62, 400 end point, 3⅞ to 4⅛ cents; 64-66, 375 end point, 4⅛ to 4¼ cents; 68-70, 360 end point, 4¼ to 4½ cents.

Natural Gasolines: The 26-70 grade 3 to 3¼ cents. The natural market was reported slow with little demand for the stabilized grades.

Kerosenes were weak with no incentive for an immediate upward trend. The 41 to 43 gravity materials were quoted at 3 to 3⅛ cents; 42 to 44, 3⅛ to 3¼ cents; and 38 to 40, 2⅜ to 2⅝ cents. The 32-36 straw zero distillate was weak at 2⅜ to 2⅝ cents.

California Markets In Good Shape

THE retail marketing situation in California is in a healthier condition than for years, but sales managers are still having their troubles, and probably will from now on. In spite of every precaution, in spite of the rules and regulations of the new marketing agreement, a recent report indicated 52 independent service stations in Los Angeles area are retailing gasoline at 14.5 cents, which is one cent under the present fixed price. Since there are several thousand stations in the area mentioned, the situation cannot be called bad.

There are at least six small independent refineries in the picture, which have started operations since the new marketing plan came into being and which are not signers of the agreement. Some of them are making "motor fuel," the octane rating not being high enough to be rated as gasoline under the state law. Much natural gasoline is used in making this low grade fuel. It can be used in motors and is being used without causing too much trouble. Some of the cut price

Summary of Field Results During Past Week

State	Completions	Oil wells	Gas wells	Failures	Init. prod.
California	6	5	0	1	2,160
Indiana	9	2	2	5	45
Kansas	28	15	0	13	6,050
Kentucky	3	3	0	0	300
Louisiana	14	7	0	7	2,290
Michigan	11	7	0	4	2,865
Montana	11	7	2	2	997
Ohio	18	6	6	6	96
Oklahoma	23	14	1	8	9,625
Pennsylvania	15	13	1	1	62
Texas	192	151	3	38	707,359
W. Virginia	10	3	6	1	88
Wyoming	2	0	1	1	0
Total	342	233	22	87	731,937

Comparison of Permits Granted for New Wells

State—	Week ending July 28	Total this month	Total this year	Total this date last year	1933 year total
Arkansas	1	6	49	31	47
California	14	50	381	460	593
Louisiana	11	62	438	405	755
Kansas	18	67	558	332	682
Michigan	11	39	258	173	420
Oklahoma	36	133	1,220	578	1,315
Texas	319	940	7,163	3,500	7,845
Total	410	1,297	10,007	5,479	11,651

stations are selling this product. No one seems to know where the other stations are securing the new supply. Some of them had cheap gasoline in storage.

If it is found possible to control the available supply of natural gasoline, it is possible the situation will further be improved. No signer of the marketing agreement is permitted to deliver gasoline to any cut price station. The larger marketers are also busy taking their old signs away from the cut price stations. In some instances, owners of these stations are making every effort to retain the old signs.

It is known there is very little "hot oil" being produced in the state. It is becoming more and more difficult for the new small plants to care for their crude requirements, and they will also have trouble in selling their fuel, as the larger companies will not buy it, if they sell at cut prices.

The general strike in the San Francisco area practically killed the sale of gasoline for five days, and since the population of that area is estimated at 1,300,000, the loss will run into thousands of gallons and will affect consumption figures for July. The strikes at Portland and Seattle will further affect gasoline consumption figures for the entire West Coast.

The general strike at San Francisco was called off July 19, and service stations were immediately opened, although the port strikes at San Francisco, Portland and Seattle continued. The port strikes were affecting the movement of petroleum products up and down the coast. It has been necessary to move gasoline to Washington and Oregon from California refining centers in tank cars at greatly increased freight costs.

The port strike at San Pedro has never caused real trouble, although shipping has been slowed down to some extent. Tankers in some instances have had to recruit inexperienced crews, and sailings have been delayed, but tankers have cleared.

Oklahoma Gasoline Taxes Show Increase

Oklahoma City.—Gasoline tax collections for the first six months of 1934 exceeded those of the same period in 1933 by $620,410.97, a gain of 13.67 percent., according to Melvin Cornish, chairman of the Oklahoma Tax Commission. For the fiscal year ended June 30, 1934, 286,387,091 gallons of gasoline were inspected. Taxes totaled $10,512,980.22 and penalty collections $10,437.94. Agricultural exemptions amounted to 24,929,539 gallons and. federal exemptions, 2,151,537 gallons.

Continued "Hot" Oil Output Threatens East Texas Plan

ALTHOUGH the East Texas market stabilization program has raised Mid-Continent gasoline prices, the spectre of failure hovers over the plan. For success was hoped for under the theory that the program by virtue of its provisions would greatly reduce if not eliminate "hot" oil production and refining. And the theories are not working out. "Hot" oil output continues unaffected, with some of the East Texas refiners apparently breaking faith in connection with their agreements under the plan to refine only legal crude and to observe gasoline production quotas assigned them by the oil administration.

Latest reports indicate probably 70,000 to 85,000 barrels of illegal production going to market each day in East Texas. Runs to stills have been increasing in the district, since the major companies under the stabilization plan have been playing Santa Claus in buying up the surplus gasoline of the area at prices which actually represent premium quotations.

Under the market stabilization program the third grade gasoline prices paid to the East Texas refiners by the large companies had worked up last week to four cents a gallon. Prior to launching of the plan early in July, the price was only 3¼ cents a gallon. But the new four-cent price was obviously at an artificial level, and therefore in danger of falling. For while the refiners were selling to the large companies at that price under the stabilization plan, substantial volumes of gasoline were going at lower prices, in some instances around 3⅝ cents. Those "outside" sales at low prices naturally jeopardize the prices paid under the marketing plan, and threaten to pull the whole Mid-Continent price structure downward.

East Texas refiners that refused to participate in the oil code administration sponsored gasoline market stabilization program are blocking the success of the plan with their low prices. Some non-participants are said to be selling third-grade gasoline at an average price of 3½ cents per gallon, while the same commodity is netting plan members four cents on sales to majors. This spread of the one half cent is retarding the natural gain in the price structure due from the current heavy demand and consumption, although prices did move up a fraction of a cent during the past week. The spread also is largely responsible for the numerous price wars prevailing throughout the state, with retail prices on the competitive grade ranging from nine to 11 cents, including five-cent taxes, in Dallas, Fort Worth and surrounding communities.

The code administrations market stabilization program forbids majors from buying gasoline where illegally produced crude is involved, otherwise the supply of cut price material could be blotted out in short order and price wars automatically eliminated. Some effort is being made to have this ban amended in order the original objective for the market plan may be realized. It is common knowledge that illicit crude is still reaching some plants bound by the plan agreement, as in the past, although specifically forbidden.

Continued running of "hot" oil will tend, moreover, to bring the markets back into the same position they occupied prior to inauguration of the plan. For the surplus gasoline bought under the program is being replaced by other surplus gasoline, and while the oil administration has sanctioned contracts involving gasoline previously made from "hot" oil, it does not propose to give such sanction to "hot" gasoline made after launching of the stabilization program.

California Gasoline Gallonage Increases

Los Angeles. — During the first six months of 1933, total of 646,506,637 gallons of gasoline was reported to California state authorities for taxation purposes, compared with 675,625,957 gallons for the same period this year, an increase of 29,119,320 gallons, or about 4.5 percent.

For the month of June, total taxable gasoline was reported for the state at 116,126,172 gallons against 125,205,052 gallons same month last year. The May total showed an increase this year over last.

Due to strike conditions, it is expected July will show a decrease when compared with July last year.

Crude Oil Price Quotations

(Figures Represent Basic or Flat Prices—Revised to July 27, 1934)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, Wk'lr., Crane, Upton, Howard and Glasscock	*.75			9-29-33
	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and SW Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-29-33
Refugio (Heavy)	.85			9-29-33
Saxet	*.85			9-29-33
Mirando	*.80			9-29-33
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
Eldorado East Field and Smackover	*.70			9-29-33
North Louisiana	29— .79	2¢	40— 1.08	9-29-33
Urania	*.85-*.87			1- 1-34
South Louisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-29-33

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Elk Basin	$*1.17			9-29-33
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.35			9-29-33
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*.45			8-25-33
Pondera	*.65			8-25-33
Hog Back, N.M.	*1.00			9- 8-33
Lea County, N.M.	*.75			9-29-33
Mid-West States				
Lima	*1.30			9-29-33
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.17			9-29-33
California				
Signal Hill	14— .65	1¢	16—$ .66	9- 6-33
	17— .69	2¢	22— .84	9- 6-33
	23— .88	3¢	30— 1.09	9- 6-33
Seal B.,Alamitos Hts.	19— .65	3¢	20— .68	9- 6-33
	21— .72	4¢	22— .76	9- 6-33
	23— .81	4¢	26— .93	9- 6-33
	27— .98	4¢	30— 1.10	9- 6-33
Huntington Beach	14— .65	4¢	15— .69	9- 6-33
	16— .72	3¢	19— .81	9- 6-33
	20— .83	3¢	28— 1.07	9- 6-33
	29— 1.09	3¢	30— 1.12	9- 6-33
Inglewood	14— .65	4¢	16— .73	9- 6-33
	17— .76	4¢	18— .80	9- 6-33
	19— .83	4¢	20— .87	9- 6-33
	21— .90	4¢	22— .94	9- 6-33
	23— .97	4¢	24— 1.01	9- 6-33
Playa del Ray	14— .65	1¢	15— .66	9- 6-33
	16— .69	4¢	17— .73	9- 6-33
	18— .76	4¢	19— .80	9- 6-33
	20— .83	4¢	21— .87	9- 6-33
	22— .90	4¢	23— .94	9- 6-33
	24— .97	3¢	25— 1.00	9- 6-33
			26— 1.04	9- 6-33
Olinda-Brea Canyon	14— .65	4¢	16— .73	9- 6-33
	17— .76	3¢	28— 1.10	9- 6-33
Athens-Rosecrans				
Domingues	23— .83	3¢	24— .86	9- 6-33
	25— .90	4¢	26— .94	9- 6-33
	27— .97	3¢	29— 1.04	9- 6-33
	30— 1.08	4¢	31— 1.12	9- 6-33
			32— 1.15	9- 6-33
Elwood (fob ship)	33— 1.03	3¢	37— 1.15	9- 6-33
Torrance	14— .65	1¢	15— .66	9- 6-33
	16— .69	3¢	20— .81	9- 6-33
	21— .83	3¢	26— .98	9- 6-33

*All gravities—flat rate.

DISTRICT	Low Gra .	Dif.	High Grav.	Date
Richfield	15—$ .65	2¢	16—$ .67	9- 6-33
	17— .70	4¢	20— .82	9- 6-33
	21— .85	4¢	22— .89	9- 6-33
	23— .93	4¢	24— .97	9- 6-33
	25— 1.00	4¢	27— 1.08	9- 6-33
	28— 1.11	4¢	29— 1.15	9- 6-33
Whittier-LaHabra	15— .65	3¢	18— .74	9- 6-33
	19— .78	3¢	24— .93	9- 6-33
Montebello	19— .65	1¢	20— .66	9- 6-33
	21— .69	3¢	22— .72	9- 6-33
	23— .76	4¢	24— .80	9- 6-33
	25— .85	4¢	26— .89	9- 6-33
Coyote Hills	16— .65	3¢	19— .74	9- 6-33
	20— .78	3¢	29— 1.05	9- 6-33
	30— 1.09	3¢	34— 1.21	9- 6-33
Santa Fe Springs	21— .72	4¢	22— .76	9- 6-33
	23— .79	4¢	25— .87	9- 6-33
	26— .90	4¢	28— .98	9- 6-33
	29— 1.01	4¢	30— 1.05	9- 6-33
	31— 1.08	4¢	33— 1.16	9- 6-33
	34— 1.19	4¢	35— 1.23	9- 6-33
	36— 1.26	4¢	38— 1.34	9- 6-33
New Hall, Mckittrick, Kern River	14— .57		19— .57	9- 6-33
Midway Sunset, Elk Hills,Buena Vista Hills	17— .57	4¢	18— .61	9- 6-33
	19— .64	3¢	22— .73	9- 6-33
	23— .77	4¢	33— 1.17	9- 6-33
Lost Hills	17— .57	4¢	21— .73	9- 6-33
	22— .76	3¢	30— 1.00	9- 6-33
Coalinga	17— .57	1¢	18— .58	9- 6-33
	19— .62	3¢	21— .68	9- 6-33
	22— .72	3¢	25— .81	9- 6-33
Wheeler Ridge	17— .57	1¢	18— .58	9- 6-33
	19— .61	3¢	25— .79	9- 6-33
Kettleman Hills	33— .93	3¢	39— 1.11	9- 3-33
Pennsylvania				
Bradford	*2.25			4- 1-34
Sw Pa., Pipe Line	*2.22			4- 1-34
Eureka Pipe Line	*2.17			4- 1-34
Buckeye Pipe Line	*2.07			4- 1-34
Corning Grade	*1.20			9-11-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24¢
May 2, 1933	.....	Cut 19¢	.....
May 9, 1933	Cut 20¢	.....	.....
May 22, 1933	Up 10¢	.....	.....
June 19, 1933	Up 10¢	Up 19¢	.....
June 26, 1933	Up 10¢	.....	Up 9-12
July 6, 1933	Up 13¢	Up 10¢	.....
July 17, 1933	Up 15¢	.....	.....
July 28, 1933	Up 15¢	.....	.....
August 11, 1933	Up 10¢	.....	.....
August 24, 1933	.....	Up 10¢	.....
August 30, 1933	Up 15¢	.....	.....
September 6, 1933	Up 10¢	Up 10¢	Up 15¢
September 8, 1933	.....	Up 15¢	.....
May 1, 1934	Up 10¢	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Three percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

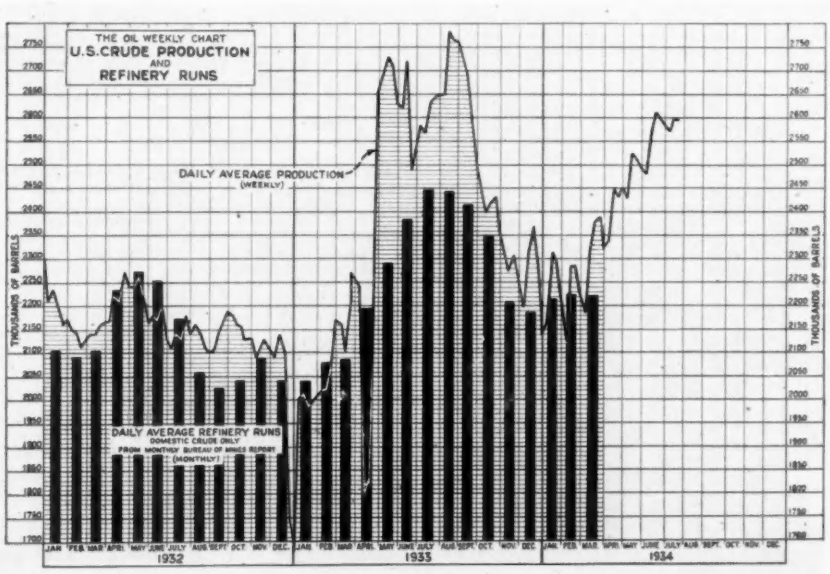
Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Three percent of gross value at well and ½-cent per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.



Text of New Federal Production Regulations

(*Continued from page* 15)

cluding the names and addresses of purchasers and a description identifying the transporting agency delivering such petroleum and petroleum products, and the identifying numbers of tenders where tenders may be required by State regulatory bodies or by orders issued under these Regulations.

(5) True and complete copies of all reports and communications filed or required to be filed under these Regulations or orders issued under these Regulations.

(6) Such other records as may now be required under the rules and regulations of other governmental agencies, State or Federal, which supervise, regulate or tax purchasing, refining, storing, shipping or consigning or otherwise dealing in as a factor, broker, buyer or seller of petroleum and petroleum products.

C. By Every Person Operating a Reclamation Plant:

(1) An opening and closing inventory of all petroleum on hand each 24 hour day.

(2) The number of barrels of each kind of petroleum which came into the possession of such plant daily, the name and address of each person from whom possession was acquired, the location from which the petroleum was acquired, the quantities acquired from each prior possessor and from each location, and a description identifying the transporting agency by which such petroleum was acquired. In case any petroleum is picked up or reclaimed by such plant from any creek, river, stream or the bed thereof, such record shall also contain information as to the apparent source of the petroleum before it went into such creek, river, stream or the bed thereof.

(3) The number of barrels of petroleum reclaimed by such plant daily and the disposition thereof showing the names and addresses of purchasers, a description identifying the transporting agency used in making delivery, and the identifying numbers of tenders where tenders may be required by State regulatory bodies or by orders issued under these Regulations.

(4) True and complete copies of all reports and communications filed or required to be filed under these Regulations or orders issued under these Regulations.

(5) Such other records as may now be required under the rules and regulations of all other governmental agencies, State or Federal, which supervise, regulate or tax the reclaiming of crude petroleum.

D. By Transporting Agencies:

(1) An opening and closing inventory including overages of crude petroleum and the products thereof on hand each 24 hour day.

(2) The daily receipts of all petroleum and petroleum products showing the kind, grade and quantity transported, the names and addresses of the consignors, and the names and addresses of the consignees, the points of origin and delivery, the identifying numbers of tenders where tenders may be required by any State regulatory body or by orders issued under these Regulations, and in the case of railroads the car numbers identifying the various shipments.

(3) In case of the first transporter and, where possible in cases of subsequent transporters, the location of the properties where the petroleum or petroleum products were produced or manufactured and the names and addresses of persons removing the petroleum or petroleum products from the properties where produced or manufactured and a description identifying the transporting agency used in making delivery from such properties.

(4) A record of all shipments of petroleum or petroleum products diverted in the course of transportation from the original point of destination or stopped in the course of transportation.

(5) Copies of all run tickets, way bills, bills of lading, division and transfer orders and other documents used in the transporation of petroleum or petroleum products.

(6) True and complete copies of all reports and communications filed or required to be filed under these Regulations or orders issued under these Regulations.

(7) Such other records as may now be required under the rules or regulations of other governmental agencies, state or national, which supervise, regulate or tax the transportation of petroleum or petroleum products.

No transporting agency shall accept for shipment any petroleum or petroleum products unless the billing and other records of transportation covering such shipment truly and accurately described by its proper and generally accepted name the commodity so shipped. Every transporter shall be held responsible for the truth of its records, way bills, bills of lading, division of transfer, orders and other papers covering such shipment, and shall be answerable as for a violation of these Regulations for each false billing of any such petroleum or petroleum products.

VII.

From time to time or periodically as called for by the Secretary of the Interior sworn reports on forms approved by the Secretary of the Interior shall be filed by producers, purchasers, refiners, reclamation plants, transporting agencies, shippers, or other persons dealing in or handling petroleum or its products. Each such report when called for shall show the full and accurate data required completely to fill out such form, accurately and fully reporting the data called for from the records required to be kept under Regulation V above.

VIII.

No transporting agency shall receive for transportation any petroleum or the products thereof unless the respective shippers and producers hereinafter described shall each furnish and the transporting agency shall receive in good faith and without reasonable grounds for believing that any facts stated are untrue, sworn affidavits setting forth such information as may be required on forms approved by the Secretary of the Interior. The following rules and classifications shall govern the furnishing of affidavits under this Regulation:

Class A. Shipments

Any shipment of petroleum, offered for shipment to any transporting agency in the East Texas or Oklahoma City areas.

Class A shipments shall be supported by affidavits of both the shipper and the purchaser as shall be required on forms approved by the Secretary of the Interior.

Class B. Shipments

Any shipment of the products of petroleum when such products are, after processing or refining, offered for shipment to any transporting agency in the East Texas or Oklahoma City areas.

Class B shipments shall be supported by an affidavit of the shipper as shall be required on forms approved by the Secretary of the Interior.

Class C. Shipments

Shipments of petroleum or the products thereof when such shipments are made from a point outside the East Texas or Oklahoma City areas.

Class C. shipments need not be supported by affidavits.

Provided, however, that under this Regulation VII, carriers outside of the state where such petroleum was produced may receive from other carriers for such transportation and may transport any petroleum or the products thereof without requiring such affidavits and shall not be subject to any liability or penalty from or on account of so receiving or transporting the same.

Provided further, that with respect to the products of petroleum any carrier or carriers may receive from other carriers for such transportation such products if the affidavit required for Class "B" shipments is furnished to the originating carrier and due endorsement of its receipt is stamped upon the shipping papers.

Provided further, that the provisions of this Regulation shall not apply to shipments of the products of petroleum by rail in less than car load lots.

Provided further, that where consignments of petroleum or the products thereof are offered for shipment in intrasate commerce and are subsequently in any manner diverted into interstate commerce in whole or in part, the interstate carrier may not accept such petroleum or such products unless the provisions of this Regulation are complied with.

IX.

When any affidavit or other sworn statement under oath is required by these Regulations to be tendered or filed by any person, such affidavit or statement must be tendered or filed by the real person in interest owning, producing, refining, reclaiming, shipping, storing, transporting, buying or selling, or otherwise dealing in or handling petroleum or the products thereof involved in the transaction or transactions which are the subject of such affidavit or statement; *provided, however,* that such affidavit or statement may be tendered or filed by a duly authorized agent of such real party in interest when proof of such authorization has been filed with the Division of Investigations of the Department of the Interior on or before the date of making or filing said affidavit or statement.

X.

These Regulations may be suspended in whole or in part by the Secretary of the Interior in any region, area, field, pool, or as applied to any particular properties or wells whenever, in his discretion, he deems their application unnecessary for the proper enforcement of the said Act or Orders issued thereunder, but no such suspension shall relieve any person, natural or artificial, from the duty of complying with the aforesaid Act and Orders; these Regulations may be by him at any time amended or changed in whole or in part.

XI.

Each and every false declaration in any statement under oath required by these Orders and Regulations, or each and every failure to file reports or to keep and preserve adequate records, as required by these Orders and Regulations, and any participation by any officer or agent of a corporation in any acts of commission or omission in performing the duties described by these Orders and Regulations shall constitute a violation of Section 10 (a) of the National Industrial Recovery Act.

In promulgating this Order, the Secretary of the Interior declares that it is his intent to adopt each Regulation and section of each Regulation independently of each other Regulation and section, and should any of the provisions of this order be held invalid, such

invalidity shall not affect the remaining provisions.

Approved and promulgated this 20th day of July, 1934.

(Signed) HAROLD L. ICKES,
Secretary of the Interior.

ORDER

By virtue of and pursuant to the authority vested in me by Sections 9 (c) and 10 (a) of Title I of the Act of Congress entitled the "National Industrial Recovery Act," approved June 16, 1933 (48 Stat. 195), and the Executive Orders of the President of the United States No. 6199 (July 11, 1933) and No. 6204 (July 14, 1933) issued pursuant to such legislation, and in accordance with Regulation VI promulgated by me on July 20th, 1934, it is hereby ordered

That every producer of petroleum in the East Texas area as defined in Regulation III, promulgated by me on July 20th, 1934, pursuant to the aforesaid authority, shall file in the office of the Division of Investigations of the Department of the Interior in Dallas, Texas, on or before August 1, 1934, a diagram of each of his producing properties, which shall accurately and completely show to scale the location of each lease, the location and identifying number of each well, the location, capacity, and identifying numbers of all tanks into which oil produced from said properties is run under the control of the producer prior to delivery to trunk pipe lines, the location and size of all pipe lines, flow lines, gathering systems and other outlets, and every method by which oil is delivered from said properties. Every producer in the East Texas area shall, within ten days after any change takes place in the facts shown in such diagram filed by him, file a new diagram complying with the above conditions.

Approved and promulgated this 20th day of July, 1934.

(Signed) HAROLD L. ICKES,
Secretary of the Interior.

ORDER

By virtue of and pursuant to the authority vested in me by Sections 9 (c) and 10 (a) of the Act of Congress entitled the "National Industrial Recovery Act," approved June 16, 1933 (48 Stat. 195), and the executive orders of the President of the United States No. 6199 (July 11, 1933) and No. 6204 (July 14, 1933) issued pursuant to such legislation and pursuant to Regulations VI and VII promulgated by me on July 20th, 1934, it is hereby ordered:

(1) I hereby approve the forms entitled "OES-1," "OES-2" and "OES-6" which are attached hereto for use in the East Texas area, provided, however, that if the petroleum offered for shipment as a "Class A" shipment was produced on or before July 11, 1933, and such petroleum has been acquired from any other shipper and/or producer and has been purchased or otherwise acquired from many sources and areas, and has been so commingled that it is impossible for the shipper to furnish the facts required on "OES-1" with respect to the designation of the properties producing the petroleum shipment, the recital of such facts may be omitted and a statement giving the following facts submitted in lieu thereof: the date and place of each transaction involving the acquisition of petroleum so commingled subsequest to July 16, 1933; the names and business addresses of the producers and/or of shippers from whom such petroleum was acquired; the amount of petroleum involved in each transaction, and a statement setting forth the reasons why the information requested in "OES-1" cannot be furnished.

(2) Every refinery, reclamation plant, treating plant, gasoline plant, and every shipper of petroleum products in the East Texas area as defined in Regulation III promulgated by me on July 20th, 1934, pursuant to the aforesaid authority, shall file at the office of the Division of Investigations of the Department of the Interior in Dallas, Texas, not later than the fifteenth day of each and every calendar month beginning with the period ending August 15, 1934, for the preceding calendar month, a sworn statement on the form entitled "OES-3" which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(3) Every pipe line in the East Texas area as above defined and every person storing petroleum or petroleum products in said area shall file at the office of the Division of Investigations of the Department of the Interior in Dallas, Texas, not later than the fifteenth day of each and every calendar month beginning with the period ending August 15, 1934, for the preceding calendar month, a sworn statement on the form entitled "OES-4" which is attached hereto, and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(4) Every producer of petroleum in the East Texas area as above defined, shall file at the office of the Division of Investigations of the Department of the Interior in Dallas, Texas, not later than the fifteenth day of each and every calendar month beginning with the period ending August 15, 1934, for the preceding calendar month, a sworn statement on the form entitled "OES-5" which is attached hereto, and is hereby approved by me, fully and accurately giving the data required to fill out such form.

Approved and promulgated this 20th day of July, 1934.

(Signed) HAROLD L. ICKES,
Secretary of the Interior.

ORDER

By virtue of and pursuant to the authority vested in me by Sections 9 (c) and 10 (a) of Title I of the Act of Congress entitled the "National Industrial Recovery Act," approved June 16, 1933 (48 Stat. 105), and the Executive Orders of the President of the United No. 6199 (July 11, 1933), and No. 6204 (July 14, 1933), issued pursuant to such legislation, and in accordance with Regulation VI promulgated by me on July 20th, 1934, It is hereby ordered:

(1) That the master, owner, or a duly authorized agent of the owner, copy of whose authorization has been filed with the Division of Investigations of the Department of the Interior at its office in Washington, D. C., upon accepting petroleum or petroleum products at any port of the States of Texas, Louisiana and California, for carriage in whole or in part to any port of the United States, shall send by registered mail to the Division of Investigations of the Department of the Interior at its office in Washington, D. C., a report in triplicate on the form designated O C R-1, which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(2) That every such master, owner or agent, designated in the manner hereinabove set forth, of such vessel, shall thereafter upon discharging petroleum or petroleum products or any part thereof at any port of the United States send by registered mail to the Division of Investigations of the Department of the Interior at its office in Washington, D. C., a report on the form designated O C R-2 which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(3) That every such report rendered upon the loading or discharging of cargo as above designated shall be mailed at the port office of the respective port of loading or discharge within forty-eight hours after such loading or discharge (in whole or in part) has been completed.

Approved and promulgated this 20th day of July, 1934.

(Signed) HAROLD L. ICKES.
Secretary of the Interior.

ORDER

By virtue of and pursuant to the authority vested in me by Sections 9 (c) and 10 (a) of Title I of the Act of Congress entitled the "National Industrial Recovery Act," approved June 16, 1933 (48 Stat. 195), and the Executive Orders of the President of the United States No. 6199 (July 11, 1933), and No. 6204 (July 14, 1933), issued pursuant to such legislation and in accordance with Regulation VI promulgated by me on July 20th, 1934, it is hereby ordered:

(1) That every producer of petroleum in the Oklahoma City area as defined in Regulation III, promulgated by me on July 20th, 1934, pursuant to the aforesaid authority, shall file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, not later than the fifth day of each and every calendar month beginning with the period ending August 5, 1934, for the preceding calendar month, a sworn statement on the form entitled "Monthly Producer's Report" which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(2) That every producer of petroleum and every skimming plant operator in the area above described shall file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, not later than the fifth day of each and every calendar month beginning with the period ending August 5, 1934, for the preceding calendar month, a sworn statement on the form entitled "Producer's or Skimming Trap Operator's Monthly Report" which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(3) That every purchaser or shipper of petroleum in the area above defined shall file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, not later than the fifth day of each and every calendar month beginning with the period ending August 5, 1934, for the preceding calendar month, a sworn statement on the form entitled "Purchaser's Monthly Report" which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(4) That every purchaser or taker of oil from tank bottoms, pits, skimming traps, pipe line leaks, or other waste oil, in the area above defined, shall file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, not later than the fifth day of each and every calendar month beginning with the period ending August 5, 1934, for the preceding calendar month, a sworn statement on the form entitled "Monthly Report for Purchaser or Taker of Oil from Tank Bottoms, Pits, Skimming Traps, Pipe Line Leaks, or other Waste Oil," which is attached hereto and is hereby approved by me, fully and accurately giving the data required to fill out such form.

(5) That every pipe line company in the Oklahoma City area, as defined above, shall file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, not later than the fifth day of each and every calendar month beginning with the period ending August 5, 1934, for the preceding calendar month, sworn statements on Forms 12 (a) and 12 (b) which are attached hereto and are hereby approved by me, fully and accurately giving the data required to fill out such forms, and that such pipe line companies on and after ten days from the date of approval of this Order, shall further file at the office of the Division of Investigations of the Department of the Interior in Oklahoma City, Oklahoma, daily reports on said Forms 12 (a) and 12 (b).

(6) In accordance with Regulation VII promulgated by me on July 20th, 1934, pursuant to the authority set forth above, I hereby approve the forms entitled "Affidavit 1," "E-N-2," "Affidavit 3," and "Affidavit 4," which are attached hereto, for use in the Oklahoma City area, *provided, however,* that if the petroleum offered for shipment as a Class "A" shipment was produced on or before July 11, 1933, and such petroleum has been acquired from any other shipper and/or producer and has been purchased or otherwise acquired from many sources and areas, and has been so commingled that it is impossible for the shipper to furnish the facts required on "Affidavit 1" with respect to the designation of the properties producing the petroleum shipment, the recital of such facts may be omitted and a statement giving the following facts submitted in lieu thereof: the data and place of each transaction involving the acquisition of petroleum so commingled subsequent to July 16, 1933; the names and business addresses of the producers and/or of shippers from whom such petroleum was acquired; the amount of petroleum involved in each transaction, and a statement setting forth the reasons why the information requested in "Affidavit 1" cannot be furnished.

Approved and promulgated this 20th day of July, 1934.

HAROLD L. ICKES,
Secretary of the Interior.

Texas Production Allowable Again Reduced for August

(*Continued from page 11*)

lowable totaled 18,622 barrels per day. The cut recommended by Griffin would have reduced the allowable for this field to 11,728 barrels per day.

The South Government Wells allowable was 4832 barrels per day under provisions of the order of July 1, and Griffin recommended a cut to 3213 barrels per day.

Since these allowables fluctuate according to the number of new wells placed on the proration schedule, no exact allowable for the fields was available when the order was issued.

The allowables for other fields in the district totaled 36,899 barrels per day. To this has been added, in calculating the state allowable, 18,622 barrels for North Government Wells and 4837 barrels for the South field.

Other Districts

Allowables in 10 Gulf Coast fields were altered by the order. Seven of these obtained increases and the remaining three were cut. Greta received the largest increase, 1500 barrels per day, which was allocated to wells producing from the 5900-foot horizon. This brought the total field allowable to 11,500 barrels per day. Each well producing from this deep sand is to be allowed 150 barrels per day until the entire 1500 barrel allocation is absorbed. From that time forward this group of wells will share equally in the allowable.

Changes in other fields and districts of the state were of minor size.

The appended table indicates the changes made in the allowables as compared with the orders of July 24.

District	July 24 Allowables	Aug. 1 Allowables	Increase Aug. 1	Decrease Aug. 1
East Texas	471,231	*400,000		71,231
West Texas	143,814	149,324	5,510	
Panhandle	56,800	56,800		
Gulf Coast	169,012	173,497	4,485	
West Central Texas	31,000	31,000		
Southwest Texas	61,156	*60,358		798
North Texas	56,500	56,500		
East Central Texas	50,496	51,996	1,500	
	1,040,039	979,475		

*These figures include estimates.

Start Survey on Oil Industry Working Conditions

Washington, D. C.—Twenty agents of the Department of Labor this week began field work in connection with a survey of wages, hours and working conditions in the petroleum industry undertaken by the Bureau of Labor Statistics to meet a demand for information for use in connection with the administration of the oil code.

The survey, requested by the Planning and Coordination Committee and the Petroleum Administration, will cover drilling and production, including natural gasoline; pipe line, refining and marketing operations. The information collected on individual plants will be held in strict confidence and only summary figures will be published in the final report.

The first part of the survey will attempt to gather data showing the effect of the code upon wages and hours in the industry, for this purpose five periods being selected, the first in May, 1929, when activity was probably at its height, and the second in May, 1933, a month preceding the adoption of the code; November, 1933, a month shortly after the adoption of the code; May, 1934, for comparison with May, 1929 and 1933; and July, 1934, to show current conditions.

Later, this information will be supplemented by an inquiry covering a cross-section of the wage structure in the industry, including such topics as occupational descriptions, sex, color, age and length of service, actual hours worked, actual earnings per hour, etc. This part of the survey will be limited to a more restricted sample of each branch of the industry.

East Texas Drilling Contractors to Meet

Dallas, Texas.—Joe H. Russell, chairman of the Drilling Practices Committee for Texas, has called a meeting of East Texas drilling contractors and producers for the purpose of hearing cost data on the drilling of wells in the counties of Smith, Rusk, Gregg, Upshur and Cherokee. The meeting will be held in the Baker Hotel, Dallas, at 9:30 a.m., August 1.

All data must be prepared in writing and all parties desiring to submit data at the hearing shall notify D. E. Legan, chairman of the East Texas Zone Sub-Committee of Drilling Practices Committee for Texas, c/o Tide Water Oil Company, Kilgore, Texas, of their intention to do so, prior to the opening hour of the hearing.

Standard Officials On Inspection Tour

Tulsa.—Eighteen Standard Oil Company of New Jersey, officials arrived in Tulsa on the morning of July 25, on the first leg of an inspection trip which will take them through Oklahome, Texas and Louisiana. At noon on the day of arrival in Tulsa visiting officials were luncheon guests of Tulsa oil leaders and in the evening dinner guests of officials of Carter Oil Company and Oklahoma Pipe Line Company, Standard Oil Company of New Jersey subsidiaries. The party left Thursday morning, July 26, visiting during the day the South Burbank pool in Osage County, the Ponca City district and the Crescent and Lucien pools and arriving at Oklahoma City Thursday evening. Friday was spent in an inspection of the Oklahoma City pool where Carter Oil Company recently acquired considerable production through purchase of the Slick-Urschel properties. On the following day the group visited the Seminole district, returning in the evening and departing for Houston. Itinerary from that point had not been definitely decided upon when the party left Tulsa.

Commenting on the world oil situation in a press conference in Tulsa, E. J. Sadler, vice president and director of Standard Oil Company of New Jersey, said, "The oil producing countries of all the world are in practically the same condition as the United States. Most of the production of the world is well behaved. However, the United States, which produces approximately 65 percent of the world production, has not been able to control its situation. More oil than has been needed had been produced, and this condition in the United States must be corrected before any further thought should be given an international conference on problems of the industry. World production probably could be doubled in a short time by throwing aside control measures.

The Iraq Pipe Line Company in

which Standard interests total 23½ percent, expects to be running 42,000 barrels daily by October 1, 1934, and to the capacity of 84,000 barrels by January 1, 1935. This oil will displace some of that which now is being imported by foreign countries. A portion of oil imported into France from the East Texas area will be displaced but not to the extent of the full amount now being imported."

The party is composed of the following officials: E. J. Sadler, vice president and director of the Standard Oil Company of New Jersey; F. W. Abrams, president of the Standard Oil Company of Delaware; C. F. Smith, vice president of the Standard Oil Company of New Jersey; George W. Gordon, in charge of South American refineries; R. P. Bolton, assistant to H. G. Seidel; H. L. Shoemaker, secretary of the Coordination Committee of the Standard Oil Company of New Jersey; H. H. Hill, chief petroleum engineer of the Standard Oil Company of New Jersey; E. P. Saulsberry, chief statistician of the Standard of New Jersey; T. B. Scott, Jr., Carter Oil Company (New York); W. J. Edmonds, assistant to S. P. Coleman; L. C. McCloskey, director; and Bart Myers, production manager of Imperial Oil Company, Ltd., Canada; J. C. Hilton, president and H. H. Hewetson, vice president of the Standard Oil Company of Louisiana; Harry Weiss, executive vice president and director, Wallace Pratt, vice president and director and John R. Suman, vice president and director of Humble Oil & Refining Company; and L. L. Anderson, vice president and manager of the Huasteca Petroleum Company of Mexico.

Domestic Fuel Oil Supply Is Ample for Domestic Heating

New York.—Assurance of an ample supply of fuel oil for domestic heating requirements of the future was given recently by R. G. Stewart, director of the Standard Oil Company (N. J.) supervising domestic marketing.

Last year, oil of the grade used in hundreds of thousands of small installations sold in the metropolitan area at 6½ cents to 7 cents a gallon. With the completion of the 1933-34 heating season, all the fuel supply companies have recently submitted new contracts to their customers guaranteeing prompt delivery of the quantities required for the 1934-5 season at a maximum price of 8¾ cents a gallon. This created a widespread impression that this country was facing a shortage of heating oil, with a prospective price rise of perhaps two cents a gallon. A requirement of the Code approved by Secretary Ickes is that the top price quoted in a contract shall be not less than 25 percent more than the posted price on the date a contract is signed. As this figure was 7 cents when the contracts went out the maximum price had to be made 8¾ cents. Indications are that the advance will not exceed ½ cent per gallon.

"There is no ground for uneasiness on the score of a sufficiency of oil for home heating plants next year, nor for years to come," said Mr. Stewart. "Few people realize how flexible the fuel oil supply is. For instance, while there has been a substantial decrease in the stocks of fuel oil east of the Rocky Mountains there is a large surplus on the Pacific Coast where there is at present something like 70 million barrels of fuel oil in storage. California shipped more than 7½ million barrels of its surplus to the eastern market last year and in all likelihood about 22 million barrels will move to the Atlantic Coast in 1934.

"The surplus on the West Coast was built up despite the shutting in of a large amount of heavy crude production. Fields like Midway, Coalinga, Elk Hills and others could produce 100,000 barrels of oil per day more than they are now yielding, and this for an indefinite period if demand warranted it. It needs only a small increase in price to change the relative position of numerous factors entering into supply.

"Outside of this big reserve on the Pacific Coast, the United States need not suffer from any deficiency in its own domestic supply while it has the tremendous proven reserves in South America. Importations from Venezuela and Colombia have been artificially held down, both by dictum of the federal government, which asked for and received a promise on the part of importers not to bring in more than 35 million barrels of oil per annum, and by the imposition of an import duty of 21 cents a barrel on the crude and fuel oil allowed. In the event of a threatened shortage in the domestic supply, the government could alter its program to the extent necessary to restore equilibrium in the domestic markets.

"There has been a marked increase in the domestic consumption and exports of gas and fuel oil in the first four months of this year. The total for that period was 129,506,000 barrels, a gain of nearly 15 million barrels or 13 percent over the corresponding first four months of 1933. However, the 1933 period was far below normal, representing the lowest point in the depression, so that the present rate of consumption is in no wise extraordinary. Indications are that for the full year 1934 domestic consumption will run about 10 percent above that for 1933, which would require about 376,000,000.

"The high point of domestic consumption of gas and fuel oil was reached in 1929 with a total of 433,577,000 barrels. The lowest consumption in recent years was in 1932—328,151,000 barrels."

Delay in Enforcing New Federal Oil Laws

Tyler, Texas.—An unexpected delay has been experienced by the United States Bureau of Internal Revenue in enforcing the collection of the one-tenth cent levy imposed on producers and refiners beginning midnight, June 9, because of the inability of the government printing department to deliver the forms required in making the monthly returns. The printed forms requiring specific information may not be available for several weeks, according to agents of the revenue bureau.

Pending the distribution of the forms the agents are confining their activities to checkups on tax payments due the government on pipe line movement of crude and products made thereof, and also the one cent per gallon gasoline tax. The latter two tax measures have been in effect since June 21, 1932.

A cash bond, or its equivalent, required of plant owners engaged in refining or processing crude and those recovering gasoline from natural gas has likewise been deferred until proper forms are available. Plant owners have been given several extensions to perfect the bond, the latest being scheduled to expire July 31. However, it is quite likely that more time will be granted. This bond feature was expected to result in some of the small plants in the East Texas field discontinuing operations. On the contrary a survey of the plants reveals that those operated in recent months have been reaping big profits through the purchase of comparatively cheap priced crude that was produced illegally, and only a few, if any, will be unable to post the bond.

Foreign Technology *and* Developments

World Control

J. B. Aug. Kessler, managing director of Royal Dutch Petroleum Company, states in an interview that the United States Government is at present energetically working to arrive at the complete control of oil production, says the July issue of The Petroleum World, a London publication, which continues: "So soon as this control has become effective the American producers will join a syndicate, whose object will be to regulate world production and world sales."

Austrian Wildcat Showing

Gostin Number 2, wildcat well drilling near Zistersdorf, Austria, is reported to have large formations showing oil sands from 888 metres to 898 metres (approximately 3000 feet). According to latest advices, plans were to deepen the well a little and attempt to put it on production.

New Belgian Refinery

Raffinerie Belge des Petroles has been formed recently at Antwerp, Belgium, with a capital of 10,000,000 francs issued in 500-franc shares, 10,000 of which have been allotted to the British Lianosoff White Oil Company, Limited. This was formed for the purpose of refining and trading in oil.

Persian Production

Controlled crude oil output in Persia during 1933 amounted to 7,086,706 tons (more than 50,000,000 barrels) as compared with 6,445,808 tons in 1932, according to figures presented recently by P. de H. Hall of Anglo Persian Oil Company to the Institution of Petroleum Technologists. The figures of Mr. Hall represent crude oil and products piped to the coast.

Of the Persian yield, Masjid-i-Sulaiman still continues to produce more than twice as much oil as the field of Haft Kel, the former having produced 4,999,635 tons in 1933 and the latter only 2,087,071 tons.

Natural Gas in Sweden

Natural gas has been discovered in small quantities in two districts of Sweden, one of which is near Landskrona and the other on the Island of Oland, both in the southern part of the country.

A member of the Sweedish Board of Trade upon being consulted stated that tests had been made for oil in the Landskrona region but that none has been found.

Iraq Line Operating

Shipments of crude oil from Iraq to Tripoli, via pipe line, began July 14. The first shipment of oil from Tripoli will be received by a tanker belonging to Compagnie Francaise des Petroles.

Gasoline Plant for Ireland

The Irish Free State Government has reserved one-tenth of the Irish Free State market for a new venture calling for the construction of a gasoline plant with an annual capacity of 3,000,000 gallons or about 200 barrels per day, the plant to be erected on Haulbowline Island under the direction of Harold Moore, M. Sc., M.I.P.T. The name of the new organization, located on Haulbowline Island is the Cork Harbor Oil Wharves Ltd. Lobitos Oil Fields, Limited, and Anglo-Ecuadorian Oil Fields, Limited, own stock in the enterprise.

English Wildcat

Drilling at Worth, near Crawley, Sussex, England, has not reached the depth at which the occurrence of oil in commercial quantities is expected, according to advices received from London.

While press reports have been favorable regarding possibilities of oil in this area, Norman M. Dudgeon, director of N. M. D. Syndicate, Limited, which has been doing the exploratory drilling, gave out the following statement recently:

"N. M. D. Syndicate, Limited, has been sinking a test well at Worth which is now down 1886 feet. No publicity of any kind is sought, and the syndicate, as you will observe, is a private one.

"In these circumstances, I do not think I can advise the syndicate to furnish a detailed report for publication.

"A certain amount of publicity has been given to the project, and certain statements have appeared in the press, but for your information, I may state that we have not yet reached the zone where we expect the occurrence of oil in commercial quantities."

Tehuantepec Wildcat

The Oil Weekly received recently the following communication regarding the wildcat activities of Richmond Petroleum Company of Mexico, subsidiary of Standard Oil Company of California, on a 10,000-acre concession in the State of Vera Cruz, Mexico.

"Several months ago it was decided to drill a wildcat well to test a large block, approximately 10,000 acres, held by the company in the State of Vera Cruz, Isthmus of Tehuantepec, Mexico.

"Because of the isolated location of the property, it being some distance in-

land from Puerto Mexico, considerable preliminary construction work had to be done before actual drilling operations on the test well could be started.

"In order to reach the location it was necessary to transport all material from Puerto Mexico, which is located on the Gulf of Mexico, up the Rio Coalzacoalcos to its junction with the Rio Uzpanapa, thence up that river past the Concepcion and Filisola oil fields to what is known as Arroyo Francia to Paso Arenal. At this place we constructed a dock with hoist and boom for unloading material from the barges by which material is transported from Puerto Mexico.

"From Paso Arenal to the well location it was necessary to construct a narrow gauge railroad. This work is now being carried on. The total length of the railroad will be approximately 13,394 meters which does not include switches and turn-arounds. Considerable work was required to clear the right-of-way for the railroad as the land over which it crossed was heavily wooded with tropical vegetation. In addition a number of trestles had to be constructed and a number of large cuts made through the hills in order to keep the railroad to an even grade.

"Flat cars which will be used in transporting material will have 10-ton capacity and will be hauled by two gasoline-kerosene driven locomotives.

"The work of constructing the railroad is still in progress but it is expected that it will be completed shortly at which time the drilling equipment will be moved to the location and actual drilling operations started.

"All of the construction work in connection with this project, including completing of the dock and railroad, as well as actual drilling of the well, will be carried on by contract."

Morocco

Twenty million francs will be spent in two years on an important program of extension and exploration of the Djebel Tselfat field in Morocco, according to a recent decision of the administrative board of Office National des Combustible Liquides sitting under direction of its president, Senator Henri Roi.

Collaborators in the work will be Compagnie Francaise, and the Bureau Minier Cherifien.

Australia

Drillers, Limited, has been incorporated, under the laws of the Federal Territory of Australia, with a capital of £250,000 (approximately $1,250,000) to drill on approximately 640 acres situated in the Parish of Beaufort, eight miles east of Roma, Queensland, and has reported showings in a test at 3173 feet.

Search for oil in the Roma district of Queensland extends over a number of years. Several wells have been drilled, but mostly on incomplete geological data. A small amount of medium grade oil and considerable petroleum gas has been obtained but no commercial production, as yet.

It is claimed, in a report by Eric A. Rudd, B.Sc., field geologist for the above company, that:

"For the first time in the search for oil in Queensland, a definite closed structure in a proved oil bearing area has been located, and an unqualified drilling recommendation has been given.

"Excellent and undoubted proof of the presence of oil and gas was encountered in the Hospital Hill (Roma), Blythedale and Roma Blocks Oil Company block, 16 bores. The Warooby Creek area, therefore, lies in a proved petroliferous province.

"Showings of oil and gas in the bores cited came from coarse sands, resting on bedrock, and the oil is migratory, having its probable source in the Permo-Carboniferous sediments of Bowen Basin, the southerly continuation of which underlies the country to the east of Blythedale and probably swings westward to the south of Roma. The structure in the Warooby Creek area is in a favorable position to trap migratory oil and there is the added possibility of the accumulation of oil in the overlap of the Permo-Carboniferous sediments along the edge of the basin."

Geological and topographical work, and the scout drilling was carried out under the direction of Dr. Frank A. Moss, chief geologist in Australia for Oil Search, Limited. A total of 150 scout bores have been made. The following conclusions were arrived at:

1. A distinct and consistent set of marker beds has been established by scout drilling, and upon these reliable sub-surface data accumulated.

2. Thirty-eight scout bores have been used to delimit accurately a closed structure.

3. The structure has approximately 16 feet of closure and a considerable drainage area. It is highly probable that the closure on this structure increases with depth.

4. The structure lies in a proved petroliferous area and in a favorable position for trapping migration oil.

5. Approximately 3900 feet of drilling will be necessary to test this structure to bedrock.

Drillers, Limited, is believed to be a subsidiary of Oil Search, Limited. The directors are: W. A. Freeman, chairman of the board; E. L. Walter, managing director; A. J. Gibson, John MacKay, J. T. Isles, E. A. Laurence, R. J. Sands.

Mexican Pipe Line

Construction has been started on a pipe line from pumping stations of Huasteca Petroleum Company (Standard Oil Company of New Jersey) at Cerro Azul, Vera Cruz state, to its terminal at Mata Redonda, near Tampico.

Preliminary estimates place the cost of the line at 3,600,000 pesos.

Japan Oil Law

The law recently enacted by the Japanese Diet providing for complete government control of the petroleum industry by a licensing system for the importation and refining of petroleum and petroleum products, the maintenance by importers of a fixed amount of stocks, and including authority to the government to purchase oil and regulate the process of refining, if deemed necessary, was promulgated on June 27 and became effective July 1, 1934, in Japan, Chosen, and Taiwan, according to Commerce Reports for July 14.

The law specifically provides that importers must maintain stocks equal to one half of the annual imports of each item during the past year and that refiners must possess the necessary equipment to enable them to refine a minimum of 50,000 kiloliters annually.

Italian Production

Of the 26,000 tons of crude oil produced in Italy during 1933, 21,000 tons came from leases operated by Societa Petrolifera Italiana, the bulk of the 5000 tons remaining having been produced by Azienda Generale Italiana Petrolio and Societa Petroli d'Italia.

Argentina

As a temporary measure until the Argentine government's refinery at La Plata can have fire damage repaired, the Y. P. F. has authorized Diadema Argentina, South American subsidiary of Royal Dutch interests, to refine about 36,000 tons (about 275,000 barrels) of crude oil from the government fields.

According to the monthly organ of the State Railways Department of the Argentine government, the Y. P. F. drilled 1937 wells in Venezuela in 1933, having a combined yield of 921,828 cubic meters (approximately 5,830,000 barrels) of oil. More than 80 percent of the drilling in Argentine Republic continues to be done in Comodoro Rivadavia field, which is accredited with having drilled 1648 wells last year.

Cancel Mexican Concession

The concession which the Compania Industrial Mineral Petrolera obtained January 31, 1930, from the Mexicana federal government's Administrative Control of National Petroleum to exploit 1,375,000 hectares for petroleum in Tamaulipas and Neuvo Leon States, has been cancelled by the National Supreme Court of Mexico. The cancellation represents a substantiation of the Federal Attorney General's contention that the franchise is void because the concessionaire failed to live up t o his requirements.

Presidential Resolution Hard on Foreigners

Unofficial opinion in Mexico seems to be that the result of President Rodriguez's arbitration resolution in the case of the Mexican Eagle Oil Company and its Southern Vera Cruz works will place a considerable handicap on operations in Mexico by foreign concerns.

Briefly, the resolution of the President would force the Mexican Eagle Oil Company to increase labor expenditures by about 35 percent, which increase cost probably will have to come out of the company's treasury. It is felt that, should the resolution of the President of Mexico be made inclusive of other foreign operators, the oil companies would not be able to bear the burden and continue to operate profitably at the same time.

Korea's Petroleum Law

Of particular interest and concern to importers of petroleum products to Chosen (Korea), is the Petroleum Business law passed by the recent session of the Diet but not as yet put into effect in Japan or in Chosen.

Salient features of this law are: (1) Manufacture and importation of petroleum products to be permitted only under license. (2) Importers and distributors of petroleum products to maintain a reserve supply—the total reserves at any time to amount to 50 percent of imports during the previous year. (3) Importers and distributors to be partially compensated by the government for the construction of storage tanks and for shrinkage of oil in storage.

Ralph Cory of the American Consulate in Seoul reports: "The liquidation of the affairs of the Chosen Shoji Kaisha is said to have been caused by its attempt to embark on extensive undertakings with a limited capital. Construction of new storage tanks, a refilling plant, and other equipment, started on a 24-acre site near Genzan, has been temporarily stopped. The Chosen Shoji Kaisha were the agents for Soviet oil.

"It is reported that a group of the more important consumers of Russian oil in Chosen are planning the organization of a new firm, capitalized at 200,000 yen to take over the interests and holdings of the defunct Chosen Shoji Kaisha and to continue the marketing of Russian oil in Chosen. Organization of this firm was delayed pending the action of the Diet on the proposed Petroleum Business Law. Additional delays are said to be due to the refusal of the representatives of Russian oil interests to enter into negotiations with the new firm except on the basis of prices considerably higher than those agreed upon with the Chosen Shoji Kaisha.

France

Compagnie Francaise de Raffinage has made application to construct a new oil dock in the southern part of the Berre pool near Marseilles. The application contemplates construction of a dock for tanker lighters and a transverse pier.

Concurrent with the above announced plans comes the announcement that the French Government, operating through the Compagnie Francaise des Petroles, plans erection of another refiner at Berre in the spring of 1935.

Russia Ahead of Schedule

U. S. S. R. (Russia) has shown an increase of nearly 25 percent in the production of crude oil, including oil gas, for the first four months of this year as compared with the first four months of 1933. Production during the first four months of this year totaled 8,200,000 tons (approximately 60,000,000 barrels) as compared with 6,600,000 tons during the corresponding period of last year.

For the first quarter of the year the program of the Soviet Regime for 1934 has been carried out in excess of expectations, production having exceeded 26 percent of the amount expected for the whole year, and drilling having exceeded 27 percent of the amount expected for the whole year, according to Soviet press.

Czechoslovakia

Production of crude petroleum in Czechoslovakia in April, 1934, amounted to 14,497 barrels, compared with 10,570 barrels in April of last year, representing an increase of 37 percent, according to Sam E. Woods of Prague, Czechoslovakia.

Venezuela

George T. Summerlin, Caracas, states that Venezuela for the year 1933 produced 119,104,814 barrels of 42 gallons each. The Lake Maracaibo region led in production as always, and was followed by the fields in the State of Monagas and in the State of Falcon. The production for 1933 represents an increase of 2,539,332 barrels over the previous year. Of the total amount produced last year, 112,972,556 barrels were exported.

Roumania's Spanish Export Business Off

International Petroleum Trade for July 15, 1934, declares that during 1933 Spanish imports of petroleum and products decreased by about 11 percent from the figures of the previous year. This decline is attributed to reduced consumption in the prevailing business depression. Russia supplied 53 percent of the total imports, the United States 21 percent and Roumania 10 percent. Imports from Russia and the United States were much the same during 1932.

Roumania suffered a drop of 54 percent in its exports to Spain during 1933, compared with 1932, due to termination of the Monopoly's (the Spanish Petroleum Monopoly) contract with Banca Lopez Bru for Roumanian products. Supplies were received normally under the contract in force with the Societe des Produits du Naphte Russe which was signed in May, 1931, to terminate on December 31, 1934. Under this contract about 1,275,000 barrels of gasoline are to be shipped to Spain annually.

Supplies were received also from the Compania Espanola de Petroleos, a Spanish organization operating a refinery at Santa Cruz de Tenerife, Canary Island.

India

Sir John T. Cargill, chairman of the board of the Burmah Oil Company, Limited, recently declared at a meeting of the stockholders of that company, "Taking the oil position of the world as a whole the equilibrium between supply and demand is not yet definitely settled, and until it is there can be no stability in the price of oil products generally throughout the world.

"And as regards our own particular market—the Indian one—we are still engaged in a fight to protect not only our own interests but the interests of the indigenous oil industry of India as a whole from the continued attacks from American, Roumanian and Russian surplus and distress oils which are being sold at definitely uneconomic prices."

» » THE WEEK'S NEWS « «
from All Fields

HIGH SPOTS IN BRIEF

EXTREME drouth conditions throughout the Mid-Continent area is having an effect upon field work, new wells completed in Oklahoma and Kansas being notable examples. Texas, despite revival of new wells in East Texas, is far below the recent rate of drilling. All sections reported 342 new wells during the week, of which 233 were producers having an initial rating of 732,000 barrels, of which 692,000 barrels was from 95 wells in East Texas. New operations announced totaled 410, showing a gain which tends to balance the report a week ago. New operations reported for the year to date have passed 10,000 and are in striking distance of the total for all last year.

West Texas

The outlook is promising for a new pool or possible large extension to nearest production in southeastern Crane County, as the result of a wildcat showing. Two and one half miles north of the Hendricks field, in Winkler County, a wildcat has found 8,000,000 cubic feet of gas. The North Cowden field, Ector County, was extended one mile south with an 800-barrel well. A minor extension was given the Yates field, Pecos County, during the week. In Upton County, interest is centered in Gulf Production Company's McElroy 103, which has cemented a record string of pipe, consisting of 10,301 feet of 7⅝-inch casing, preparatory to testing.

Oklahoma-Kansas

The most important strike in Oklahoma was the finding of a 100-barrel per hour producer in the Cleveland sand three miles south of Chandler in Lincoln County.

In Kansas the outstanding development was the finding of a small oil producer in the Otis gas field, which heretofore has not produced crude.

The largest well to be found in eastern Kansas in seven years was completed last week in Chase County. Several important showings were found in rank wildcats of western Kansas, which district was also the scene of a number of important new wildcat locations.

South Texas

The finding of the second recent shallow strike at Colletto Creek, Victoria County, is expected to result in an immediate drilling campaign for that district. A second and deeper pay horizon has been found in the Angelita field, San Patricio County. A new serpentine plug has been discovered in Bastrop County near the Cedar Creek field. The Jacob field, Live Oak and McMullen Counties, received another south extension; making it appear even more likely that it will connect with the Calliham pool. The second completed test in the Stratton field, Nueces County, has failed to make a producer. The second test to the deep sand in the West Cole field, Webb County, looks better than the discovery well.

Gulf Coast

In the Texas Gulf Coast area interest is centered in Boling Dome, where production may be developed in the Frio formation, according to present showings in a well soon to be tested. Another Cockfield producer has been completed in the Raccoon Bend field, Austin County.

The recently discovered Bosco field, Acadia and St. Landry Parishes, Louisiana, promises to become one of the most important Gulf Coast fields. Recent completions have proved it of considerable size.

Michigan

Completion of a wildcat commercial gas producer in Velvadire township, Montcalm County, has increased materially the gas bearing potentialities of the Mecosta-Montcalm district. Other developments in this sector included two outside failures in the Dundee lime.

Texas Panhandle

An extension producer is in process of completion near the discovery well of Gray County that may revive drilling in that area. The well is showing for a 250-barrel pumper. A north offset to a small gas producer in the Sunray sector, Moore County, has been completed as a 116-barrel producer.

Pottawatomie County Wildcat Has Showing

Shawnee, Okla.—Phillips Petroleum Company et al topped Woodford shale at 4040 feet and were drilling below 4130 feet in Ford 1, C NE NE NW Section 17-6n-3e, approximately two miles northwest of the West Asher pool in southern Pottawatomie County. In the northeastern portion of the next township to the east E. W. Jones et al were drilling below 4251 feet in Simpson dolomite in their Lucas 2, C SW NE NW Section 2-6n-4e. Viola limestone was topped at 4138 feet, Simpson dense at 4180 feet and the dolomite at 4222 feet. Pay was encountered between 4229 and 4237 feet where operators had 200 feet of oil in the hole. Nearest production is in the South St. Louis area where production is obtained largely from Viola limestone and upper Simpson dolomite.

West of the St. Louis pool proper, Inland Development Company's Brandenberg 1, C SE SE NW Section 9-7n-4e, treated Hunton limestone at 3738 to 3785 feet with 1500 gallons of acid, loaded with 110 barrels of oil. The well responded with a flow of 615 barrels during the 24-hour period ending at 7:00 a.m., July 25, and 550 barrels the following day. It was estimated to be making an average of 11 barrels of water per day. Practically all wells in this area have made some water initially and those which did not do so usually have made water a short time after completion. Water seems to be intimately associated with oil and at such low pressures that nothing can be done in the way of a water shut off.

Important Cleveland Sand Strike in Lincoln County

Chandler, Oklahoma.—The Texas Company's Gessman 1, SE SE NE Section 33-14n-4e, appeared to be the most interesting test in Oklahoma, when early in the week it started flowing at an estimated rate of slightly more than 100 barrels of oil per hour and making gas at the rate of approximately 10,000,000 cubic feet. This test, which is located approximately three miles south of Chandler in south central Lincoln County, was drilled several weeks ago into Wilcox sand at 4999 to 5002 feet. Finding water at that depth operators plugged back to 4975 feet and ripped the casing from 3839 to 3842 feet. It was then impossible to lower the water below 3700 feet and the test was plugged back to 4955 feet to test a gas showing. When the bradenhead was opened the well started flowing between the nine-inch and surface casing at an estimated rate of 10 barrels of 42 gravity oil per hour. During the past week it was plugged back and the casing ripped from 3042 to 3080 feet, opposite Cleveland sand from which the production is now thought to be coming. The company is laying a 3½-mile line from the Chandler pool and should be connected to test within a few days. This is the first production of apparent importance from Cleveland sand in Lincoln County.

Oil Well Found In Otis Gas Field

Wichita, Kans.—Mid-Kansas Oil and Gas Company's Mohr 1, C NW Section 10-18s-16w, on the northwest flank of the Otis gas field in eastern Rusk County, furnished the major development of the week in Kansas when it started flowing at an estimated rate of 7,500,000 cubic feet of gas and spraying approximately five barrels of 34.6 gravity oil per hour from siliceous limestone topped at 3526 feet and drilled to 3356 feet. This is the first oil to be found in an area which has yielded some large gas wells and the test probably will cause considerable drilling in an effort to locate oil production around the edges of the structure which heretofore was thought to contain only gas. Rock pressure in the new well is reported to be 1010 pounds.

Lucien Pool Test Catches Fire

Perry, Oklahoma.—Carter Oil Company's Henn 2, CSW SE Section 29-20n-2w, in the southern portion of the Lucien pool of southwestern Noble County, blew the swab from the hole on Thursday, July 26, and became ignited, doing considerable damage to the rig. The fire was not extinguished soon enough to prevent damage to the derrick and it had to be replaced. Depth of the hole was 5029 feet at the time the swab was blown out and when the fire was extinguished the well started flowing a head every 15 minutes. It is a 40-acre south offset to the company's Henn 1 which made 3351 barrels in 12 hours initially from a total depth of 5174 feet.

Langston Pool

Guthrie, Oklahoma.—J. C. Shaffer Inc., et al's Moss 1, C SW SW SE Section 11-17n-1w, north offset to the discovery well in the Langston pool approximately nine miles northeast of here, flowed 108 barrels during the 24-hour period ending at 7 a. m., July 24 and 131 barrels during the succeeding 24-hour period. Production is coming from Wilcox sand at 5104 to 5124 feet.

John Fitts Area Looks More Promising

Ada, Okla.—In the John Fitts area approximately 12 miles southeast of here, Blackstock et al's Lewis 1, C NE NE SE Section 19-2n-7e, topped Viola limestone at 4378 feet and drilled to 4800 feet where it had 3000 feet of fluid in the hole, about 50 percent of which is water. A late report stated that operators had swabbed 42 barrels of oil from top of the fluid column but had not lowered the fluid level. The test is in the Graben area where formations have been subjected to intense local folding and regional tilting. Geology of the area is considered the most difficult of any section of the state north of the Arbuckle Uplift.

J. C. Shaffer, Inc., et al's Hardin 1-A, NE NW SW Section 30-2n-7e, drilled Viola limestone from 3672 to 3858 feet and reported showings of oil throughout that section. This test is a twin to Hardin 1, which was plugged and abandoned several months ago when it blew out and formed several sizeable craters before it was killed with mud and cement.

Edmond Pool Well Is Still Fishing

Edmond, Oklahoma. — Mid-Kansas Oil and Gas Company's Dahl 1, C SE SE SE Section 31-14n-3w, west offset to the discovery well in the Edmond pool in northwestern Oklahoma County, was still a matter of much concern as operators tried to circulate below lost tools to kill gas pressure. Most of the hole was drilled with rotary tools but the test was standardized to complete. Top of the Simpson formation was encountered at 6290 feet and Wilcox sand logged from 6385 to 6393 feet, the total depth. The hole bridged 60 feet off bottom and when the bridge was broken high gas pressure blew tools up the hole snapping the drilling line and permitting tools to fall back. Rotary tools were returned to the location for the fishing job since operators expect a large gas volume at high pressure. The test is said to be 316 feet structurally higher than the discovery well which is only 660 feet to the east.

Amerada Petroleum Corporation's and Stanolind Oil and Gas Company's Suneram 1, C NE NE NE Section 6-13n-3w, south offset to the discovery well, logged Simpson dolomite from 6384 to 6458 feet, mudded off a small showing of gas at 6454 to 6458 feet and rigged up rotary tools to drill deeper. This test also had been standardized but fear of high gas pressure caused operators to put rotary tools back into the hole.

Company Defies 40-Acre Ruling for Crescent Pool

Enid, Oklahoma.—T. T. Eason, president of Eason Oil Company, has voiced strong opposition to orders for drilling of only 40-acre centers in the Crescent pool of western Logan county. That the company will defy at least temporarily the instructions of Secretary Harold L. Ickes to shut down Eason tests now being drilled in the centers of 10-acre tracts, was indicated early in the week as two tests so located continued to operate. On July 24 Katschor 2, NW NE SW Section 34-17n-4w, was preparing to cement surface pipe and Katschor 3, NW SW SW of the same section was drilling below 4925 feet.

Commenting on the situation Eason said, "Secretary Ickes and the National Petroleum board are going too far in trying to regulate the company's 10-acre drilling development plan in the Crescent pool. Our legal department is investigating the right of the oil administrative board to dictate a 40-acre development plan for the pool. We are of the opinion that they are assuming too much authority. Other companies in the field went ahead and drilled like they wanted to. Then they got the drilling order fixed like they wanted it so they can get all the oil. We feel that we should be able to drill and operate our property as we wish as long as it is always reasonable."

The company's main contention for exemptions from the 40-acre plan is based on the belief that the property lies near the edge of the oil accumulation and to force it to drill in 40-acre centers would in effect be forcing it to drill below the oil-water contact despite the belief that production underlies certain undrilled portions of the property.

Polo Discovery Well Shuts Off Water

Perry, Oklahoma.—The Texas Company et al's Voss 1, CSW NE SE Section 28-22n-2w, discovery well in the new Polo pool of western Noble County, found second Wilcox sand at 4899 to 4919 feet and started making one half bailer of water per hour from the last three feet of sand. It was first plugged back to 4914 feet where it was making a small amount of water and then to 4895 feet, where operators obtained a water shut off. Production for the 24 hours ending at 7 a. m., July 26 was 1300 barrels, an increase of four barrels over the previous 24-hour gauge. Permission was requested to allow a daily production of 500 barrels for 30 days and at the end of this time the well probably will be cut down to 50 barrels per day.

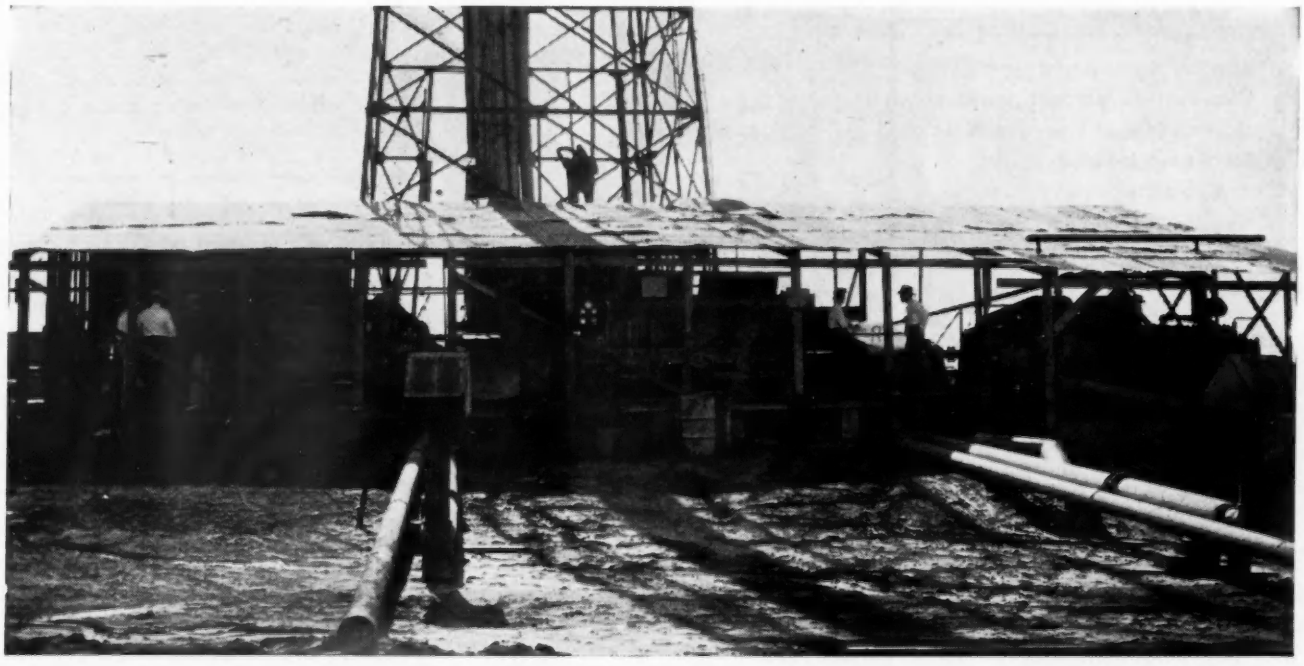
Start Wildcat Test Near Crescent Pool

Crescent, Oklahoma.—Gypsy Oil Company had rig on the ground for Graham 1, CNW NW Section 3-17n-4w, a wildcat test located two miles south of production in the Lovell pool and four miles north of production in the Crescent pool of western Logan County. This test has been pending for months but operators were unable until recently to obtain the required agreements with fee owners. Location is on the Nemaha Granite Ridge trend which has produced the North and South Blackwell pools, and the Garber, Marshall, Lovell, Edmond and Oklahoma City pools.

Drouth Causes Slump In Oklahoma Activity

Tulsa—Continued dry weather, which in portions of Oklahoma is causing a serious shortage of water even for domestic consumption, had a marked effect on state development during the week when first reports totaled 36 and only 23 tests were completed. Among the latter were 14 oil wells with combined initial production of 9625 barrels, one dry gas well with initial volume of 5,000,000 cubic feet and eight dry holes, a total of 23 which involved the drilling of 58,360 feet.

A novel move on the part of two of the major companies was the transfer of an electrically driven rotary rig



Phillips Petroleum Company et al's Community-Baker 1, nine miles southeast of production in the Oklahoma City field, is being drilled with heavy-duty Diesel engines, which are so connected through clutches that both prime movers may be compounded to operate the draw works or either one can be used to run the slush pumps or rotary table. The well has made excellent progress in reaching 7000 feet. Loffland Brothers, Tulsa, are the drilling contractors.

Replace with the Modern Pipe Vise

— a "TOLEDO" Open-Side Pipe Vise.

Heavy reinforced malleable frame. Hardened steel vise screw. Large vise screw bearing. Heat treated steel jaws, full length, overlapping, easily and quickly replaced. Long handle gives ample leverage. Construction permits working close to face of vise. Excellent for fitting make-up work.

A quality pipe vise at extremely low prices. Made in three sizes.

Model	*Capacity*	*List Price*
No. 00	⅛" to 1½"	$ 4.75
No. 0	⅛" to 2½"	6.00
No. 3	⅛" to 4½"	14.00
Clamp for No. 00 Vise		2.00

Subject to Liberal Discounts.

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO.

New York Office and Display Room
72 LAFAYETTE STREET

"TOLEDO"
TRADE-MARK REGISTERED

from a test in an area where water is available to another locality where water is hard to find. This was done despite the fact that the test on which electrical equipment was used is practically completed. It is being re-equipped with steam rotary equipment. Reports of the week are shown below:

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Croxton O&G, Southern Trust 4, ne ne sw sw 3-1s-14e	*	40
Dave Mallerne et al's D.O.K. Land & Cattle Co., cwl e½ se 35-2s-13e	*	460
CARTER COUNTY—		
Amos Drilling Co., Spark-Hook 2, ne se se 13-1s-3w	*	2180
Samedan Oil Co., Hopson 8, sw sw ne 25-1s-3w	230	2747
COTTON COUNTY—		
Ben Russell's Zumburunn 1, se se nw 21-4s-12w	*	3580
CREEK COUNTY—		
J. E. Crosby's Casey 4, sw nw se 3-17n-8e	75	1349
Beverly Development Co., M. Littlehead 1, se sw sw 9-15n-9e	*	3020
Atlantic Oil Co., Kimbley 2, ne sw nw 16-14n-10e (owdd)	27	3321
GARFIELD COUNTY—		
Sinclair Prairie Oil Co., East Kisner 5, sw sw ne 19-22n-3w (owdd)	20	1458
HUGHES COUNTY—		
Limestone O&G Co., Walker 13, se se ne 15-7n-8e	152	1238
Harmonn, Vierson 1, ne ne se nw 15-7n-8e	17	3090
LINCOLN COUNTY—		
Magnolia Pet. Co., Gilliam 6, nw sw sw 8-14n-4e	5	5044
MARSHALL COUNTY—		
Russell & Wham et al, Ulrich 1, se nw sw 36-7s-5e	*	130
NOBLE COUNTY—		
Carter Oil Co., Webber 3, cnw sw 20-20n-2w	¶3-4668	5165
Gypsy Oil Co., Verna 2, cse se 29-20n-2w	¶1700-1790	5137
OKLAHOMA COUNTY—		
Carl Larkin & Warr et al, Farris Rodesney 1, nw ne sw 22-11n-3w	¶2¾-756	6577
OSAGE COUNTY—		
H. W. Worley, 1, cel ne sw 16-25n-6e	27	2836
Kasishke Oil Co., 6, ne se sw 15-25n-6e	210	2760
Carter Oil Co., Barritt 1, sw sw nw 11-25n-6e	*	2817
Carter Oil Co. & Empire Oil & Ref. Co. 3, nwc ne 3-25n-6e	1608	2814
C. T. Mathews, 3, ne ne nw 26-21n-9e	*	1133
Sand Springs Home, 2, sw ne se 2-20n-10e	¶5	2010
SEMINOLE COUNTY—		
Legon & Todd, Wilson 2, ne ne ne nw 30-8n-8e	40	4047

*Failures; †Junked; ¶Million cu. ft. gas.

Purcell Wildcat Is Below 6000 Feet

Purcell, Okla.—Denver Producing and Refining Company's Newbern 1, C SE SW Section 22-5n-1e, approximately 12 miles southeast of here, was drilling below 6345 feet in Simpson formation topped at 6022 feet. No showings had been reported. It is rumored that the general area between Pauls Valley and Purcell is due for considerable play by several major companies during coming months.

Small South End Oklahoma City Well

Oklahoma City.—Royalty Service Company and Sunray Oil Company's Simpson 1, SW NW SW SE Section 34-12n-3w, in the northern portion of the Oklahoma City pool, topped Wilcox sand at 6336 feet and drilled to 6495 feet, where it started flowing at the rate of 2751 barrels for the 24-hour period ending at 7:00 a.m., July 17. On successive days it made the following gauges: July 18, 2974 barrels; July 19, 3803 barrels; July 20, 3949 barrels; July 21, 4053 barrels; and July 22, 3899 barrels.

On the south end of the pool Indian Territory Illuminating Oil Company's Oklahoma State 11, C NW NW NW Section 36-11n-3w, had the Green shale sand from 6555 to 6640 feet from which it yielded 66 barrels in a four-hour potential test on gas-lift.

Kansas Completes 15 Oil Producers

Wichita, Kansas.—Kansas activities resulted during the week in 18 first reports, 15 oil wells with total initial production of 6050 barrels, one abandoned rig, three abandoned locations and nine dry holes, a total of 28 completions. A heavy rainfall of short duration around Wichita and cloudy weather during the latter part of the week gave first indication of relief from water shortage which has become a serious problem during the past two or more weeks. In the western portion of the state where most of the present and proposed activity is located, operators were resorting to all available sources for water in an effort to complete tests now under way. Little effort was being made to get under way at new tests.

Reports of the week were as follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
BARTON COUNTY—		
Hilligrass, Isern 3-A, cne ne 12-20s-11w	*	3338
BUTLER COUNTY—		
Hay et al, Balin 1, se sw se 36-26s-6e	12	2163
COWLEY COUNTY—		
Van Meter et al, Moore 1, ne ne ne ne 5-35s-4e	*	....
ELK COUNTY—		
Diller, Key 2-A, cel e½ se ne 26-31s-10e	8	1653
GREENWOOD COUNTY—		
Phillips Pet. Co., Beal 8, cse sw ne 28-23s-11e	18	1976
Spencer, Threll 3, cne ne 17-24s-12e	140	1756
HARVEY COUNTY—		
McBride, Fresan 2, cnw nw sw 20-22s-3w (owdd)	1200	3517
KINGMAN COUNTY—		
Skelly Oil Co., F. B. Mites 5, se nw nw ne 30-27s-10w	250	3472
McPHERSON COUNTY—		
Glesson Oil, Hamilton 1-B, nw sw sw 28-19s-1w	339	3476
Derby Oil Co., Grifffin 1, csl se se sw 11-19s-2w (owdd)	644	3382

*Failures; †Junked; ¶Million cu. ft. gas.

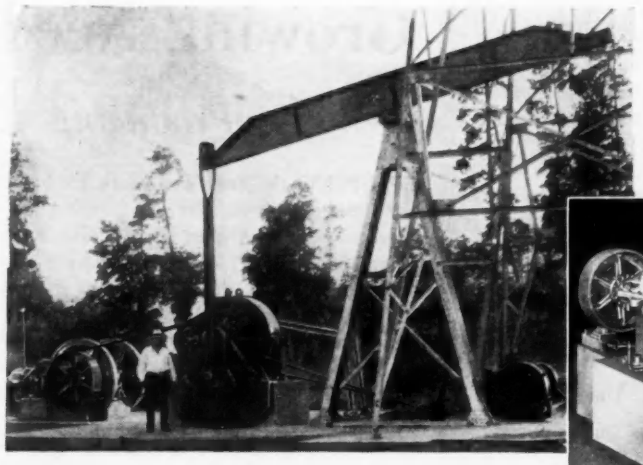
Company, Well and Location	Init. Prod. Bbls.	Depth
Shell Pet. Corp., Griffin 4-A, se se nw 14-19s-2w	733	3369
Mid-Kansas O&G Co., Bridgens 3, sw ne sw 2-20s-3w	†	....
Liberneck et al, Kaufman 1, nw nw nw 22-21s-3w	79	3096
Stafford, Krehbiel 1, nwc se 27-21s-3w (owdd)	*	1950
RICE COUNTY—		
Smith & Ash, Beyer 2, nw ne nw 21-19s-9w	*	3302
Keith, Grove 1, se se nw 29-19s-9w	215	2985
Atlantic Oil Co., Schmidt 2, cel w½ nw sw 11-19s-10w	†	....
Aylward, Belden 1, sw se ne 27-20s-7w	*	3752
Gypsy Oil Co., Christopher 5, ne se ne 6-20s-9w	1470	3266
RUSH COUNTY—		
Central Light, Brack 1, se se se 10-17s-16w	†	....
Schermerhorn, Mauler 1, cne 14-18s-16w	¶47	3528
RUSSELL COUNTY—		
Liggett & Shell Pet., Chriler 1, csw sw 9-11s-15w	*	3363
Signal Oil Co., Sellens 2, ne se nw 26-15s-13w	†	....
SEDGWICK COUNTY—		
Sovereign Oil Co., Cresson 1, sw sw sw 6-26s-1e	135	2597
Wentz, Bright 6-A, ne ne nw 1-26s-1w	*	2669
Dickey Oil Co., Nolan 2, ne ne ne 20-28s-1e	804	3111
Larick et al, Gillespie 1, ne se sw 6-28s-1w	3	3687
STAFFORD COUNTY—		
Vickers Pet. et al, Craven 1, sw sw ne 15-25s-11w (owdd)	*	4103
WOODSON COUNTY—		
Elbar Oil Co., Figgie 1, se se se se 27-23s-14e	*	1766

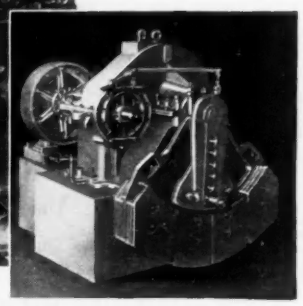
*Failures; †Junked; ¶Million cu. ft. gas.

No Change Expected In Kansas Proration

Wichita, Kans.—Although definite orders for the coming proration period have not been issued it appeared at the conclusion of a proration hearing held before members of the Kansas Corporation Commission on July 24, that the method of prorating would not be revised at present. Under the system now in effect all wells capable of producing less than five barrels per day are unprorated. Percentages ranging from 91 to 17.05 percent of potential are allowed in the 43 remaining classifications which are based on size of production. An effort has been under way for several months to have the proration exemption increased from five to 15 barrels and to exempt all wells making 15 barrels or less per day. It is the contention of companies advocating this move that the present method is a future danger and ultimately will seriously affect the smaller wells. Others contend that to increase the exemption would place the burden of proration largely on the shoulders of the major companies.

Several suggestions made during the hearing are now under consideration by the commission. Among these was a plan to prorate on the basis of a formula. Another proposed the taking of potentials every 60 days on wells making 300 barrels or more per day, every four months

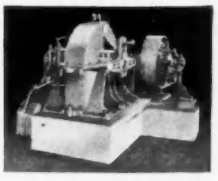




IDECO PUMPERS are the *profitable* oil getters!

Left: A 100% Ideco-equipped pumping installation from engine to derrick. *Above:* Ideco geared pumper SS-100.

YOUR pumping job is too important to be handled by equipment that you can't depend on absolutely for trouble-free service. Why not guard against periodic shut-downs and continuous pumping losses by insisting on the use of only Ideco *geared* Pumpers. They're made for doing the job with the utmost efficiency—and for doing it at lowest possible cost.
Let us tell you about them and why they are the most profitable oil getters you can put on your wells. Built in a complete line—20 to 100 h.p. May be equipped with sprocket for operating tubing hoist or a tug rim for driving bull wheel. Write our nearest branch for bulletins 100 C, D and E.



Back side of unit showing new Ideco 3-wing backside crank for multi-well pumping. A big feature!

THE INTERNATIONAL DERRICK & EQUIPMENT CO.
Beaumont, Texas Columbus, Ohio Los Angeles, Calif.
Branches in all leading oil centers

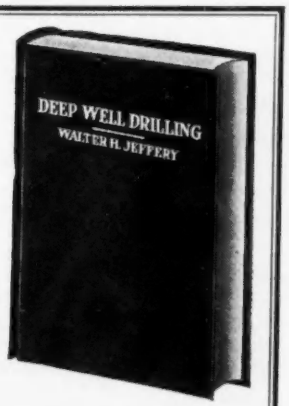
Announcing the **THIRD EDITION**
of the Well Known Book . . .

DEEP WELL DRILLING
by **WALTER H. JEFFERY**

Re-written and revised to date, and enlarged by the addition of the following New Chapters:
GEOPHYSICAL PROSPECTING AND AIR MAPPING
STRAIGHT HOLE DRILLING AND THE TREATMENT OF CROOKED HOLES.
WATER SUPPLY.
THE GAS-AIR LIFT METHOD OF PRODUCING OIL.
A. P. I. CODES.

Preparatory to writing the new book, the author spent weeks in a first hand study of modern methods of drilling by the rotary system, and of completing wells, controlling high pressures and operating wells in the deep fields of California and Oklahoma.

The third edition contains 816 pages, 150 pages more than the second edition, and 452 illustrations, but the price is the same, $6.00.



Send Check to **GULF PUBLISHING COMPANY**
3301 BUFFALO DRIVE HOUSTON, TEXAS

on wells making between 100 and 300 barrels per day, and every six months on wells making 100 barrels or less. It was claimed that such a system would enable the computation of more accurate potentials and therefore more equitable allocations since flush production declines more rapidly than that in the more steeled stages. Homer Hoch, chairman; Jess Greenleaf and E. E. Blincoe, members of the Corporation Commission, conducted the hearing.

Largest Eastern Kansas Well in Seven Years

Wichita, Kansas.—Slick, Pryor and Lockhart's Leedy 1, SWC NE Section 25-22s-9e, in the Morning area of southeastern Chase County, came in late in the week flowing 160 barrels the first 12 hours from Bartlesville sand at 2427 to 2486 feet, the total depth. This is the largest flowing well completed in eastern Kansas in several years.

Atlantic Oil Producing Company announced location for Vanaman 1, C SE SE NE Section 15-20s-33w, approximately 12 miles south of Scott City in southern Scott County. It is to be a rotary test and is one of the farthest outlying wildcats announced in many months. Nearest oil production is western Ness County more than 45 miles to the northeast and nearest gas production in the Hugoton area approximately 30 miles to the southeast.

Watchorn Oil & Gas Company and Continental Oil Company's Rhodes estate 1, C SW SW Section 14-11s-23w, four miles north of the town of Wakeeney in northern Trego County, topped siliceous limestone at 3990 feet, had first water at 4070 feet and was being plugged to abandon with a hole full of water at 4222 feet. This was one of the western most tests in the state.

James Davis et al's Katterjohn 1, SWC Section 13-19s-10w, one and one-half miles southeast of the Brandenstein pool in western Rice County, topped siliceous limestone at 3292 feet, had a small showing of oil at 3295 feet and was running five-inch casing to top of the lime with 1000 feet of oil in the hole at 3314 feet. It was also reported making about one bailer of water per hour.

Ashby et al's Whitson 1, C NW SW SW Section 16-11s-15w, one-half mile from production in the North Fairport Pool of northwestern Russell County, topped Kansas City limestone at 3069 feet, set five-inch casing at 3137 feet and had pay from 3175 to 3178 feet, where it swabbed at the rate of 12 barrels per hour for the first six hours. Two miles west of the town of Russell E. K. Carey et al had timbers on the ground for Schaffer 1, C NW NW SW Section 27-13s-14w.

Growing Need *for Fields Producing* Lubricating Oils

DURING the past five years crude oil obtained from the outstanding discoveries, such as East Texas, Oklahoma City, Kettleman Hills and other pools, has tended toward greater content of the lighter hydrocarbon fractions with a deficiency in lubricating qualities. As a result refiners are finding a growing need for crude oil excelling in lubricating fractions. Recent interest in Osage County, Oklahoma, has been due in part to a general shortage of oil from outside of the prorated areas but principally to the quality of oil obtained from the highly prolific Burbank sand. In the following table a comparison is made of crudes obtained from the Burbank sand, the Wilcox sand in the Oklahoma City pool, the Wilcox sand in the Seminole district, and of the oils obtained from 12 other Oklahoma districts which now yield only a small portion of the state's daily production: not always clearly reflect the exact refining characteristics, but in general they may be used for purposes of comparison. In a majority of instances the approximate summaries obtained by use of the Hempel method denote quite closely the refinability of a crude. It will be noted from data in the above table that Burbank sand crude contains a total of 40.7 percent in the cuts above gas oil compared to 56.3 percent from Oklahoma City crude, 60.8 percent from Seminole crude, and 58.6 percent from crude in 12 other scattered Oklahoma pools. On the other hand Burbank crude contains a total of 8.5 percent of medium lubricating distillate and lubricating distillate compared to 8.0 percent from Oklahoma City crude, 6.4 percent from Seminole crude and 8.6 percent from 12 other pools. It will also be noted that the Oklahoma City and Seminole crudes were devoid of the viscous lubricating distillate from which the highly valued bright stocks are made.

Comparison of Burbank Oil with Oklahoma City and Seminole Wilcox Sand Oil

After United States Bureau of Mines-Distillation Hempel Method

Characteristics	Approximate Summary Burbank Oil	Okla. City Wilcox Sand	Seminole Wilcox Sand	Avg. Chara. of 12 Okla. Dist.
Color	Greenish black	Brownish green	Green	.....
Specific gravity	.837	.825	.827	.....
A. P. I. gravity degrees	37.6	40.0	39.6	37.8
Viscosity at 100° (Saybolt)	43 sec.	40 sec.	39 sec.	45 sec.
Sulphur, percent	0.32	0.16	0.33	.31
Pour point, degrees F.	10.0	Below 5.0	Below 5.0	.....
Gasoline, light ends, percent	8.5	10.0	13.2	9.6
Total gasoline and naphtha	29.7	30.2	38.6	33.6
Kerosene distillate	11.0	16.8	4.9	11.7
Gas oil	14.0	9.3	17.3	13.3
Nonviscous lubricating Dist.	11.4	11.8	9.3	9.7
Medium lubricating Dist.	7.2	8.0	6.4	6.6
Viscous lubricating Dist.	1.3	....	....	2.0
Total distillate	74.6	76.1	76.5	76.1
Residuum	22.4	22.6	22.1	21.0
Carbon residue	6.2	3.6	7.3	7.2
Carbon residue in crude	1.4	0.8	1.6	1.6

It should be understood of course that laboratory analyses of crude petroleum do

West Coast Stocks Decline 28 Million

Los Angeles.—During the period from January 31, 1933, to June 30, 1934, total stocks of all petroleum products in California declined from 166,416,484 barrels to 137,573,740 barrels, or net withdrawals in that time of 28,832,744 barrels.

For the same period, stocks of heavy crude including fuel oil, residuum, Diesel and gas oils, declined from 99,796,706 barrels to 78,906,268 barrels, a net change of 20,890,438 barrels. Refinable crude stocks showed little change, while gasoline storage was off about 2,000,000 barrels.

During June, net reduction in storage of all products was 1,556,452 barrels. Of this total, 1,459,695 barrels represented heavy crude and fuels, while light crude stocks gained 134,509 barrels and gasoline stocks were off 363,693 barrels.

East Texas Allowable Cut Recommended to Commission

Austin, Texas.—Texas oil operators gathered at the statewide proration hearing in Austin last Monday heard Gordon Griffin, chief petroleum engineer for the Texas Railroad Commission, recommend that the allowable for East Texas be cut to 400,000 barrels per day.

This reduction would be sufficient to meet the cut for Texas recommended by Oil Administrator Harold L. Ickes in his recommendations for the month of August. The East Texas allowable on July 22 had mounted to 470,621, and should the commission follow Griffin's recommendation, there would be some 30,000 barrels per day remaining to be distributed to other fields after the 40,000 barrel reduction suggested by Ickes is made.

However, it should be noted that Griffin recommended this allocation for conservation purposes alone, stating that the field operated most efficiently at that point, in his opinion. It is very unlikely that he will recommend any increases in other fields to offset any cut that is made in East Texas. It is also exceedingly unlikely that the members of the Railroad Commission will follow Griffin's recommendation to the letter. Any order reducing the allowable of East Texas below 450,000 barrels per day is highly improbable.

Griffin also recommended sharp reductions in the allowable for the two Government Wells fields, as well as the new Hull field in Liberty County. The remainder of the hearing was given over to the usual reports on the fields.

East Texas

On Friday, July 20, the commission engineering staff completed a series of two-hour open-flow potential tests on 69 key-wells scattered throughout the East Texas fields. Because 19 of these tests were unsatisfactory, they were discarded and the new potential figures for the field will be based on only 50 tests.

Griffin personally checked all these reports and at the hearing he told the commission that while the individual well tests showed a drop of only about 10 percent in the potential, it was his opinion that the weighted potential of the field would be 20 or 25 percent below the current figure, which was 10,337,146 barrels per day on July 22.

The average bottom-hole pressure of the fields on June 29 was calculated as 1225 pounds, Griffin said, the lowest which has been recorded in eight months. Because the entire engineering staff was engaged in making the potential tests, no bottom-hole pressure tests were made in July before the hearing, but these will probably be completed and tabulated before August 1.

Griffin urged that the allowable of the field be fixed at that portion of the hourly potential which would permit the production of approximately 400,000 barrels per day. He pointed out that many pumping wells had begun to flow after such an order was instituted last fall, and he believes that such a plan now would make for a healthy condition in the field.

R. E. Hardwicke, Fort Worth attorney representing several of the major companies operating in East Texas, suggested that some definite plan be worked out by the commission for holding hearings on applications made by operators for special potential tests on individual wells.

It was explained that the commission has a policy of allowing such tests in those instances where the operator is dissatisfied with the allocation made to his well based on the controlling key-well. Under the system used now, these operators file their applications at will, and a large part of the work of the engineering department is devoted to making these tests throughout the month.

Hardwicke suggested that a date be set during the month upon which all such applications would be heard and discussed. Immediately following these hearings the wells could be tested, and the remainder of the time the engineers could devote to other work.

Griffin approved of this plan and estimated that it would save a third of the time of his department in East Texas.

Southwest Texas

A cut of 6894 barrels per day in the allowable for the North Government Wells field and 1619 barrels per day in the allowable for South Government Wells was recommended to the commission by Griffin.

He said that bottom-hole pressure tests in these fields which were completed shortly before the hearing, showed that presure had dropped 80 pounds per million barrels produced

KERO TEST
REGISTERED U.S. PAT. OFF.

QUALITY FORGED STEEL FITTINGS

DON'T CONFUSE these fittings with ordinary light weight, short threaded forged fittings.

No sir!

KEROTESTS have been especially designed of high grade alloy steel to do their work in a dependable and satisfactory manner.

They have extra long threads accurately cut to API standards. Heavy walls and hubs enable them to maintain thread accuracy regardless of strains used in making and breaking. They are THE QUALITY Forged fittings for every high pressure and shock service.

KEROTEST
MANUFACTURING COMPANY
Pittsburgh, Pa.

KERO TEST
REGISTERED U.S. PAT. OFF.

since the last tests were made in March. The fields were given an allowable based on bottom-hole pressure only on July 1, 1934.

He asked that this cut be made, so that the top allowable per well would be 35 barrels per day. The current order fixed the top allowable at 60 barrels per day for the best wells in either field. Griffin said that he planned to take pressure tests in the field every 30 days, and that he would recommend an upward adjustment of the allocation if these tests showed that the pressures were declining at a reasonable rate.

Dan Moody, representing Reed and McKay who operate in the South field, and John Boyle, attorney for operators in the North field, protested against this proposed "experiment." He questioned Griffin at length in an effort to prove that his plan was an "experiment," and that the same results could be obtained by the use of less stringent methods.

They urged that he cut the wells back a few barrels at a time, testing at the end of each 30 day period, and sought to prove by his testimony that the proper rate of flow could be determined as readily in this manner.

Griffin insisted, however, that his plan was the best. He pointed out that the fields would undoubtedly benefit by the equalization of pressure resulting from the sudden cut, and that the commission would certainly be proceeding safely if this system is followed.

The operators protested against the "equalization," contending that it would result in the migration of oil and pressure from the better leases to those which had been depleted.

It seems probable, however, that the commission will accept Griffin's suggestions, at least in a modified form.

Rusk

Operators in the new Rusk field, Henderson County, submitted to the commission a list of tentative rules for the spacing, drilling, completion and operation of wells there. These rules, as a general proposition, closely followed the rules recently promulgated by the commission for the Cayuga field in Anderson County.

Considerable discussion developed over the proposed rule to allow only one well to 20 acres. All of the operators represented, except Sinclair Prairie Oil Company, believed that this would be the most satisfactory plan, and some testimony was introduced to show that such spacing would drain the field.

Sinclair Prairie, however, contended that such wide spacing was not necessary. Questions of witnesses by R. C. McDermott of the Sinclair Prairie Company, indicated clearly that they believe that too little is known about the field at the present time to determine definitely how it should be handled.

The operators agreed that two strings of casing would be sufficient. The surface casing to be set 50 feet below the Carizzo water sand, or at a minimum depth of 250 feet.

A maximum gas-oil ratio of 1500/1 was suggested, with the usual total displacement allowance for high gas-oil ratio wells.

A deviation ruling allowing five degrees of deviation from the vertical on tracts of 20 acres or more, four degrees on tracts of 10 to 20 acres, and three degrees on tracts smaller than 10 acres was recommended to the commission.

After the hearing the case was taken under advisement by the commission. No action was expected until a transcript of the case had been made, as Commissioner Thompson was the only member present.

Other Districts

Testimony on conditions in other fields of the state were given. Several requests for either cuts or increases in allowable were made, but the majority of these were of minor size.

New Hull, in Liberty County, will be cut 3159 barrels per day if recommendations of Chief Petroleum Engineer Griffin are followed by the commissioners.

Commission engineers recently made a potential survey of the field under Griffin's direction, which showed that the potential had dropped 42 percent since the last tests of this kind were made. He urged that a similar cut in the allowable be made, which would leave the field with an allocation of 4362 barrels per day, in place of the current allowable of 7521 barrels.

Texas Refinery Control Bill Is Held Valid

Austin, Texas.—The Third Court of Civil Appeals has affirmed the judgment of the Travis County District Court holding valid the new refinery control bill passed at the last session of the legislature.

In the case of George L. Culver vs. Railroad Commission, the new law, known as House Bill 99, was attacked on the grounds that it violated the search and seizure provisions of the constitution.

Judgments of both the district and appeals courts held that the requirements of the statute were within the police powers of the state.

Lax Enforcement Exists in East Texas

Tyler, Texas.—Estimates on the volume of crude produced in the East Texas field during the past week in violation of proration restrictions varied from 70,000 to 85,000 barrels daily. State authorities responsible for enforcement and prosecution have been unusually lax in exerting any effort to curb this activity, which has been growing in volume each week for more than a month. Illicit production is selling at a price range of 25 to 50 cents per barrel, with quotations showing a tendency to drop to lower levels because of the apparent lessened hazard of punishment inducing other operators to exceed their allotted quotas and protect properties from drainage.

Except for three injunction suits filed during the past week, information gathered by the enforcement staff of the commission and turned over to the Attorney General James V. Allred's field forces has not been acted upon for more than a month. Court orders to discontinue producing excess oil is no longer effective in discouraging veteran producers of "hot" oil, as no effort is made to prosecute for contempt of the court order.

Approximately 2600 cars of gasoline, fuel oil, various forms of crude tops and other miscellaneous refined and semi-refined products were shipped by East Texas refiners during the week ending July 22. This movement involved about 82,000 barrels of petroleum products daily, and was exclusive of the deliveries of gasoline and kerosene made by plant owners in fleets of tank trucks serving all market centers within reasonable hauling distance.

Allowable production of the field for the week ending July 23, according to the records of the commission, averaged 468,700 barrels daily from 13,999 wells. During this same period the trunk lines extending from the field were credited with an aggregate of 487,750 barrels daily in crude runs. The latter stepped up their runs an average of 2850 barrels daily as compared to the previous week. The commission's estimate on crude deliveries to plants in the district was reported as being 69,280 barrels daily, with 55 plants operating. However, 19 plants are credited with refusing information on their activities.

Austin, Texas.—The allowable for the Furhman pool in West Texas has been fixed at 333 barrels per day by an order of the Texas Railroad Commission issued on July 25.

This replaces the former allowable of 176 barrels per day. The new order was retroactive to July 1.

East Texas Completions Register Strong Come Back

Tyler, Texas.—Staging a strong comeback on drilling operations after taking a slump for several weeks, the East Texas field was credited with 95 completions during the past seven-day period. There are now more than 14,000 completed oil wells in the field, which covers an area aggregating about 118,000 acres. The density of one well to 8.4 acres now prevailing is destined to go much higher as it is quite probable that development work will continue until there are between 20,000 and 23,000 completed wells.

Well spacing rules applied to the field by the Texas Railroad Commission to prevent unreasonable drilling are not enforced sufficiently to have any particular meaning. Operators seeking exceptions have been resourceful in finding ways and means of evading the restrictions, although special hearings are required in such cases.

Two dry holes, a gasser and a junked test, were included in the list of completions reported last week, leaving 91 new oil wells to share in the allowable production of the field. The gas belt on the south end of the field registered a 15,000,000 cubic foot capacity well when Eastern Texas Petroleum Company's W. L. Arnold 1, SWc 84-acre lease, L. N. Sparks Survey, drilled into broken Woodbine sand at 3635-3685 feet, with a sub-sea depth of 3321 feet. The two dry holes were drilled on west side leases, and in each instance several months were spent in plugging back from bottom hole water before plugging orders were issued.

Detailed list of completions for the East Texas field during the past week follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Ajo Oil Corp., Joe Lee 4-B (25-ac)	4300	3761
Arkansas F O Co., J. E. Wheelis 8 (80½-ac)	7500	3702
Atlantic, J. E. Strickland 2-D (84-ac)	1000	3672
J. E. Strickland 3-D (84-ac)	1000	3649
Butler & Calhoun Co., F. J. Cox 3 (10-ac)	5400	3687
Deep Rock Oil Corp. et al, W. W. Holland 7 (40-ac)	7000	3700
Eastern Texas Pet. Co., W. L. Arnold 1 (84-ac)	¶15	3685
Federated Oil Co., W. W. Holland 3 (20-ac)	6500	3708
M. E. Florence et al, Thompson 1	7200	3775
Gulf, G. G. Turner 29 (312-ac)	6800	3740
Hamilton Pet. Co.-Jenkins Bros., Wm. Jobe 10 (109-ac)	6000	3682
Haynes Oil Corp., Clark Lee 12 (73.6-ac)	9600	3644
W. W. Hinchcliffe et al, L. J. Pinkston 2 (4-ac)	9100	3765
Humble, Kangera 45-A (330-ac)	10,000	3672
Chas. Pilgreen 12 (136.4-ac)	9600	3771
W. L. Price 45 (432.05-ac)	9000	3724
R. E. L. Silvey 42-A (240-ac)	10,500	3718
R. E. L. Silvey 44-A (240-ac)	10,500	3713
H. L. Hunt Prod. Co., A. B. Wooley 8 (53-ac)	5400	3749
Magnolia, Mayfield Alford 5 (30½-ac)	5500	3670
W. W. Holland 4-B (17.57-ac)	6000	3710
T. O. Mason 15 (147-ac)	3500	3665
J. W. Mason et al, J. R. Irion 1	*	3722
John E. Mabee Consolidated Corp., W. P. Brett 10 (41-ac)	3000	3715
Samp Stone 5 (17.59-ac)	5500	3641
Alex McCutchin et al, Temple Stone 3 (5.99-ac)	7200	3789
T. O. Wright 4 (5-ac)	8000	3712
M. H. McMurrey, Tr., G. A. Turner 7 (112-ac)	7100	3791
Mid-Kansas, W. T. Grissom 71 (842.7-ac)	9000	3641
Miller Prod. Corp., Bradford 3 (34-ac)	5000	3640
Bradford 7 (34-ac)	3500	3618
Oil Production, Inc., L. Harmon 7 (28-ac)	6800	3820
Olson Bros. & D. L. Johnson, J. S. Powers 13 (131-ac)	11,500	3688
Sayre Oil Co., J. Cansler 6 (40-ac)	10,000	3788
Sun, J. J. Denton 7-A (114.2-ac)	3400	3725
Texas Co., Allen Kersh 17 (211-ac)	8600	3625
Weaver-Perry Oil Corp., T. O. Wright 9 (12-ac)	8500	3697
J. S. Wheelis, Jr., et al, I. J. Smith-Gulf 9 (101-ac)	9700	3695
KILGORE AREA—		
Atlantic-Byrd-Frost, Inc., M. Whaley 12 (71.4-ac)	9200	3640
Byrd-Frost, Inc., J. B. Watson 4-A (22-ac)	11,500	3613
Gulf, H. C. Alexander 24 (209-ac)	6600	3549
C. Brown 23 (254.65-ac)	5500	3515
M. E. Peterson 10 (205-ac)	8000	3685
J. L. Henderson & H. J. Holden, M. R. Terrell 2	4600	3647
Houston Oil Co., M. T. Cole 5 (40-ac)	7200	3560
Houston Prod. Co., W. P. Brightwell 4 (22-ac)	10,500	3560
Humble, L. D. Crim 114 (906.98-ac)	9000	3627
L. D. Crim 119 (906.98-ac)	10,000	3642
J. T. Sexton 10-A (137-ac)	4000	3695
Idaho Oil Co., C. M. Dickson 2 (20-ac)	500	3577
Invincible Oil Co., W. Williams 2 (14-ac)	7400	3586
T. A. Johnson & Owens, M. T. Cole 6-C (29.73-ac)	10,000	3538
Patrick Prod. Co., J. B. Watson 4 (10-ac)	9000	3657
Albert Plummer et al, J. R. Beall 7 (79-ac)	7200	3686
Root & Rhodes, Adkins 3 (3-ac)	10,500	3670
M. C. Scheble, Rec., Sabine River 7-A, Tr. No. 7	8800	3556
Shell, P. M. Bates 11 (65-ac)	7400	3612
Shoreline Oil Co., M. Douglas 2 (3-ac)	8300	3558
Tom Sowell & Bros., Cumi Wells 1	*	3683
Stroube & Stroube, Post Oak School 1 (2-ac)	7100	3600
Sun-Texas Seaboard, Ed Smith 5 (53.3-ac)	8600	3663
Trans-State Oil Co., Willis Smith 2 (3-ac)	8700	3560
LONGVIEW AREA—		
Adams & Lyles, T. Anderson 10 (62½-ac)	8000	3500
Arkansas F O Co., W. T. Burnside 26 (209-ac)	8600	3496
Killingsworth 1 (100-ac)	4700	3635
F. T. Rembert 8 (86-ac)	9600	3481
Atlantic, Ethel Burnside 28-A (204-ac)	10,000	3536
J. M. Moore 56 (434-ac)	9800	3555
J. M. Moore 58 (434-ac)	9500	3542
J. M. Moore 60 (434-ac)	10,000	3540
C. & G. Oil Co., T. B. Harris 15 (91-ac)	9000	3486
Deep Rock Oil Corp., B. Jones 10 (61.12-ac)	8600	3636
Dyck Oil Co., J. M. Christian 9 (37-ac)	9100	3615
Eastern Texas Pet. Co., D. F. Smith 16 (611-ac)	8800	3587
J. C. Falvey et al, B. Doby 3 (20-ac)	9700	3773
Garrett & Groneman, Thrasher 1	8500	3611
Gen'l Crude Oil Co., L. Graves 4 (90-ac)	6500	3679
T. D. Humphrey et al, J. H. Thomas 2-A (50-ac)	†	3175
H. F. Kimball, Tr., Tenery 2	9400	3655
Joe Long Drlg. Co., W. W. Owens 1-C (72-ac)	7000	3635
C. H. Lyons-J. K. Wadley, T. J. Dunbar 7 (75-ac)	4300	3651
B. F. Phillips et al, C. Brooks 3 (18.07-ac)	2000	3620
Sabinas Oil Corp., T. M. Collins 14-C (75-ac)	7800	3726
Selby O&G Co.-Lewis Prod. Co., Snavely 11-A (214½-ac)	10,000	3600
Snavely 2-D (105.8-ac)	8500	3584
Snavely 7-D (105.8-ac)	10,500	3592
Shasta Oil Co., E. G. Richey 4-B (24-ac)	8000	3577
Shelbourne et al, W. B. Walker 3 (174.3-ac)	4500	3564
Sinclair Prairie, M. Lawson 16 (84.19-ac)	9000	3537
E. L. Smith O&G Co., E. A. Watts 7 (96-ac)	8000	3605
H. N. Tucker-Natchitoches Oil Corp., M. O. Sheppard 6 (31.38-ac)	8500	3590
United East & West Oil Co., Sabine River 1, Tr. No. 2	8800	3589
Washington Oil Corp., Wm. Cobb 6 (23.17-ac)	10,500	3562
Yount-Lee Oil Co., J. F. Flemister 10 (60-ac)	8500	3580
Julia Snoddy 5-B (51-ac)	8200	3548
VAN ZANDT COUNTY (Van Field)—		
Pure Oil Co., W. A. (Ella) York 11 (109-ac)	*	2994
HUNT COUNTY—		
H. O. Shawver et al, J. H. Jones 1	*	3104
SMITH COUNTY—		
D. E. Stimson & Preston Rose, E. Wiggins 1	*	4528

*Failures; †Junked; ¶Million cu. ft. gas.

Two Failures and Five Producers for West Texas

San Angelo, Texas.—Two wildcat failures and five oil producers were completed in West Texas during the past week. An aggregate of 1950 barrels of new production was added by the latter.

A dry hole for the Big Spring area, Howard County, was completed by Southern Oil Corporation (America) in its J. T. Frazier 1 in sulphur water at 3504 feet after passing up several good oil and gas showings in the 3100-foot lime horizon. Ector County yielded the other failure when R. L. York & O. C. Harper's W. F. Bates 1, NEc Section 38, Block 44, T-2-S, also passed up minor oil and gas showings before encountering sulphur water between 4455 and 4518 feet. It was trying for an extension to the oil pool opened last fall by Broderick & Calvert, Inc. and Harper on the Elliott F. Cowden ranch.

Completions in West Texas during the past week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
ECTOR COUNTY—		
Skelly Oil Co., W. E. Connell 1	250	3653
R. L. York & O. C. Harper, W. F. Bates 1	*	4518
FISHER COUNTY—		
E. L. Smith Oil Co.-Neversuch Oil Co., Fee 2	600	3104
HOWARD COUNTY—		
Sinclair Prairie, G. M. Dodge 11	180	3820
Southern Oil Corp., J. T. Frazier 1	*	3504
WARD COUNTY—		
Farrell & Co., J. B. Bennett-Pure 3	505	2554
Sinclair Prairie, H. Archenhold 5	415	3060

*Failures; †Junked; ¶Million cu. ft. gas.

Important Developments In West Texas Areas

San Angelo, Texas.—The northeastern Andrews County wildcat test of Humble Oil & Refining Company on the R. M. Means ranch remained an unknown quantity late last week while drilling out remnants of a formation tester packer at 4280 feet. This test is located in NEc Section 2, Block A-35, P. S. L. Survey, and has logged evidence of oil and gas saturation in the porous limestone for about 150 feet, but several attemps to make drill stem tests have proven failures. It has already proven the presence of structure, with a heavy flow of dry gas at 2957 feet, and is being counted upon to mark the entry of a new pool for the lime horizon in West Texas.

The outlook for a new pool, or possible extension of considerable proportions to nearest production, was more promising for the Cordovo-Union Oil Corporation et al's Jax Cowden 1, southeastern Crane County wildcat, towards the end of last week in showing live oil while drilling in lime at 3140 feet. It is located near center of 2000-acre block, and in Section 13, Block "X". First oil and gas showings were logged at 2802-17 feet, with an elevation of 2524 feet.

Wildcat territory about 2½ miles northeast of the Hendrick field and a like distance southeast of a single oil producer attracted interest to northern Winkler County when the Sayre Oil Company, Oklahoma City, encountered an estimated flow of 8,000,000 cubic feet of gas in its J. F. Howe 1 at the 2665-foot level. It is located on 80-acre lease in NWc SW Section 12, Block 26, P. S. L. Survey. Tools were blown up into the hole and jammed.

A rated initial production of 800 barrels daily was credited to Landreth Production Corporation's Texas Pacific Land Trust 1-B, NEc N½ S½ Section 3, Block 43, T-1-S, after being shot in lime at 4275 feet. It is on the south end of the North Cowden field, Ector County, and more than a mile from nearest production.

Allowable production of the Yates field has been ordered increased from 41,850 barrels to 46,550 barrels daily effective August 1. This field was the first flush area in Texas to adopt orderly proration, and in spite of its big potential rating and diversified ownership it has never broken ranks. The allowable was cut from 46,500 barrels to 41,850 barrels daily on July 1 along with several other large fields because of the State's allocated production quota being exceeded. The California Company's M. A. Smith 7, Lease 1, located 1094 feet west of the northeast corner of Section 37, afforded a minor extension for the west side of the Yates field in registering an estimated flow of 20 barrels of oil per hour from lime at 1424 feet. It was drilled with a rotary rig equipped with a pressure control outfit, and in anticipation of a small producer the company cemented 5½-inch casing at 1303 feet.

Oil Well Completed In Sunray Sector

Amarillo, Texas.—Shamrock Oil & Gas Company's A. F. Robertson 1, located in the Sunray sector of the Dumas district, Moore County, registered an hourly flow of 116 barrels of pipe line oil, with gas yield estimated at 10,000,000 cubic feet daily from dolomite limestone at 3364-3372 feet. This well cased off 63,000,000 cubic feet of dry gas production from the upper section of the lime in cementing 5-3/16-inch pipe at 3360 feet. It is located in the SEc Section 165, Block "3-T", T&NO Ry. Survey, and is a north offset to a small oil gas producer completed from the same horizon by Magnolia Petroleum Company's C. R. Jones 1 in August, 1931.

Panhandle Completions Are All Producing Wells

Pampa, Texas. — The Texas Panhandle reported 11 completions, all producers, during the past week. There were ten oil wells, with a combined initial flow of 4395 barrels daily, while a single gasser in eastern Gray County yielded 2,500,000 cubic feet of dry gas after plugging back from salt water encountered in the expected oil horizon.

Gray and Wheeler Counties were the only contributors to the completion list, although a number of tests are in process of completion in Hutchinson County. Territory near the scene of the discovery oil well for Gray County has an extension producer in process of completion that promises to revive drilling. Continental Oil Company's Combs-Worley 1-A, SWc SE Section 58, Block 3, I&GN Ry. Survey, located about one mile from nearest production, is showing for a 250-barrel pumper after light shot in lime and granite wash formation at 3070-3080 feet. The oil tests 43 gravity. Wilcox Oil & Gas Company, discoverer of the Pampa district's first oil producer, is to drill a south offset, while Gulf Production Company is confronted with a west offset.

A second producer in the most prolific section of the western Wheeler County area has drilled into bottom-hole water. Shell Petroleum Corporation's T. J. D'Spain 1, NEc W½ NW Section 52, Block 24, swabbed 885 barrels of high gravity oil in 22 hours from granite wash at 2372-2408 feet, but encountered salt water in deepening to 2502 feet. At the latter depth it swabbed 120 barrels of oil and 45 barrels water on 24-hour test, then shut down to plug back. Christie-Hickman Drilling Company's D'Spain 1, an east offset to the above well, drilled into water at 2478-2481 feet, but successfully plugged back to 2458 feet and gauged 1205 barrels initial on gas lift. Alma Oil Company's J. M. Noel-Gulf 1, NWc W½ NE Section 46, Block 24, afforded a minor extension to the oil producing area in registering an initial flow of 90 barrels natural from granite wash formation at 2512 feet.

Completions in the Texas Panhandle during the past week follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
British-American O. P. Co., J. L. Phillips 7	210	3272
Cambrian Oil Co., L. H. Webb 2	250	2655
Empire Gas & Fuel Co., A. J. Culler 2	215	3310
Harry Foster Oil Co., L. H. Webb-Humble 2	¶2½	2725
Humble, Wm. Jackson 7	200	3000
Magnolia, E. Haggard 1	205	3309
Phillips Pet. Co., Combs-Worley-Foxx 6	390	2975
Southern Petroleum Exploration, Inc., J. S. Baird 4	195	3250
Wilcox O&G Co., Combs-Worley 28	1430	2932
WHEELER COUNTY—		
Christie-Hickman Drlg. Co., T. J. D'Spain 1	1205	2481
Mid-Kansas, M. Huselby 2	75	2548

*Failures; †Junked; ¶Million cu. ft. gas.

North Texas Drillers Use Salt Water in Boilers

Wichita Falls, Texas.—Completions in North Texas dropped to an abnormally low level last week when a total of only 33 were reported by scouts as compared to 62 the previous week. Inability to procure water in needed quantities has curbed field work to a low level, particularly in Archer County, and a long siege of rainfall is needed to bring drouth relief to the operators.

Rather than to play a waiting game, a number of operators are switching to oil engine propelled drilling rigs, while others are using chemically treated salt water that is available at most of the old leases in the district. Use of salt water in boilers on drilling rigs has been

successfully tried in past years, although it is extremely hazardous.

An aggregate of 2199 barrels of new production was added by the 21 pumpers completed last week. The remainder of the completions included 11 dry holes and a deep junked hole in Grayson County.

Search for production in the Canyon lime horizon, Archer County, is being pressed by independent operators even though scores of wildcat failures have resulted since the discovery of the Chalk Hill field, only Canyon producing area in the county. Grisham & Dillard's Archer County 1, T. P. Glass Survey, failed to break the successive run of disappointments in drilling to 2390 feet.

Detailed list of completions in North Texas during the past week follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
Bridwell Oil Co., Falls County 6-C, Blk 20	50	1126
Jas. N. Crofton et al, Logan 4	20	1177
F. P. Cullum et al, Logan 9, Blk 23	*	1000
Fain-McGaha Oil Corp., G. C. Green 14	300	1188
Fain-McGaha-Humble, Logan 40	300	1162
Grisham-Dillard et al, Archer County 1	*	2390
Fred H. Guyer et al, W. T. Coffield 1	*	1095
Pois-Schultz-Weaver, F. C. Green 28	150	1153
Rathke Oil Co., Benson 6-A, Sec 1808	25	950
Ray & Staniforth, Perkins-Farmer 1, Sec 10	125	1603
Texas Co., L. W. McCrory-Wilson 1, Sec 103	*	1606
GRAYSON COUNTY—		
Verne Dumas et al, M. E. Williams	†	5046
JACK COUNTY—		
J. F. Barton et al, E. W. Whittaker 1	*	1386
Brazos River Gas Co., M. M. King 1-B, Sec 2	10	2900
W. H. Kerbow et al, W. M. Jackson 1, Sec 1	*	604
WICHITA COUNTY—		
Hunter Oil Co., Waggoner Bros. 3-H, Sec 2	*	1873
King Royalty Co., Waggoner 2-H	200	1562
McClure & Son, J. E. Hobson 1, Sec 3	*	660
WILBARGER COUNTY—		
Consolidated Oil Co., W. T. Waggoner 4-T, Sec 35	350	1880
Consolidated-Cosden Oil Corp., Waggoner 12-M, Sec 4	85	1230
Mel Richards et al, W. T. Waggoner 1-C, Sec 30	*	1102
E. P. Waggoner et al, Waggoner 1, Sec 34	10	1903
W. T. Waggoner, Jr. et al, Waggoner 2, Sec 22	150	1881
A. B. Wharton, Jr. et al, Waggoner 2-A, Sec 34	310	1876
YOUNG COUNTY—		
Beavers - White - Duncan, Remington-Balknap 7, Sec 2248	15	579
Remington-Belknap 8, Sec 2248	9	606
E. F. Estergren et al, A. C. Casey 1, Sec 1905	*	755
J. H. Kleiner et al, J. Graham 6, Sec 2249	30	595
Kleiner-Hill-West, Langston 55, Sec 1490	15	608
Langston 56-B, Sec 1490	10	602
Langston 57-B, Sec 1490	*	585
Langston 58-B, Sec 1490	25	608
Langston 59, Sec 1490	10	571

*Failures; †Junked; ¶Million cu. ft. gas.

SCANDINAVIA

Oil Field Brake Lining

SCANDINAVIA has no plies to peel off. It wears down evenly throughout its life. It will not soften or spread under heat and pressure, nor will it smoke or burn.

For the most efficient "ton-mile" performance be sure to specify Scandinavia Brake Lining.

•

Scandinavia Solid Woven Cotton Belting

Pumping » Drilling » Conveying » Elevating

•

Manufacturers

SCANDINAVIA BELTING COMPANY

Newark, N. J. » Cleveland, O. » Pittsburgh, Pa. » Charlotte, N. C.

Distributors

HARRISBURG ENGINEERING COMPANY
Fort Worth, Texas and branches

MID - CONTINENT SUPPLY COMPANY
Fort Worth, Texas and branches

MECHANICAL PRODUCTS CORPORATION, LTD.
Los Angeles, Calif.

MORE OIL

. . . can be recovered at lower cost with JENSEN Straight-Lift JACKS and electric or gas engine (interchangeable) PUMPING UNITS. Investigate! See page 242 of the Composite Catalog or write for illustrated literature. Conveniently located dealer points.

JENSEN J JACKS

JENSEN STRAIGHT LIFT JACKS

JENSEN BROS. MFG. CO. COFFEYVILLE, KANSAS

New Serpentine Plug Found in Bastrop County

San Antonio, Texas.—Another serpentine plug has been proven productive in Bastrop County. It is located 3500 feet north and a little west of the Cedar Creek field and likely will be of about the same proportions.

Joe Mills et al's Litton 1 is in process of completion after coring soft, saturated serpentine at 1628-30 feet. The formation was topped at 1507 feet, and 6⅝-inch casing is set at 1490 feet. The hole is bottomed at 1630 feet, but likely will be drilled a little deeper before final completion.

The test is located 1044 feet from the northeast line and 1005 feet from the southeast line of the J. A. Navarro survey.

The Cedar Creek field has 14 producing oil wells. A total of 10 dry holes have been drilled.

The credit for the discovery goes to magnetometer work of Paul Crawford of San Antonio, who mapped both the Cedar Creek field and the North Cedar Creek field, as the new strike likely will be known.

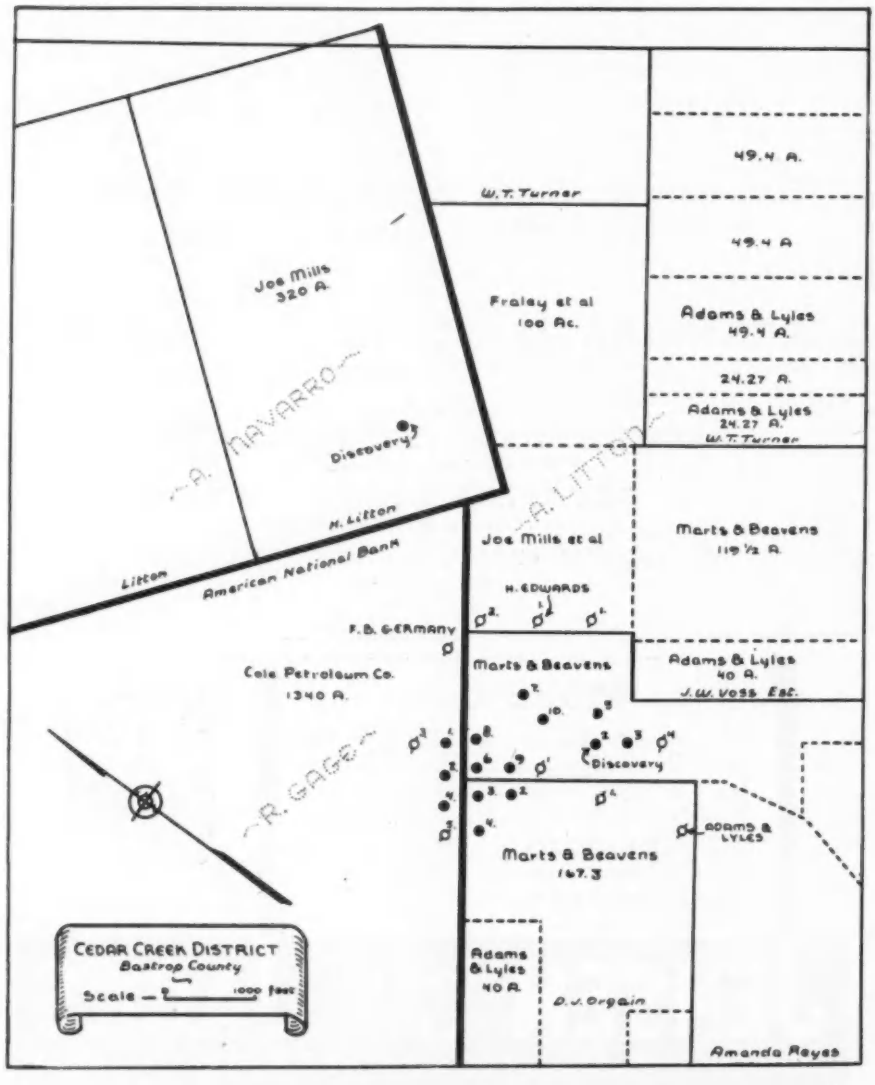
Jacob Field Given Another South Extension

San Antonio, Texas.—Another south extension apparently has been provided to the Jacob field of Live Oak and McMullen counties by Stewart Holding Company's L. Jacob 1, which topped the shells at 844 feet and has set casing. This well is located a quarter of a mile south of Jacob production and in the direction of the Calliham field, which recently proved productive in the Pettus sand, same level as the Jacob field. The two fields likely will be connected.

The exact location of the well is 1650 feet south and 330 feet east of the southwest corner of the Loma Oil Company's L. Jacob lease. It is in the John Fadden survey No. 8.

Stewart-Smith and Storey's Jacob 1-A, John Fadden survey, nearest production to the above test, made a pump test last week producing at the rate of five barrels an hour from 864 feet. It was shut in to connect to storage and mudded up. The hole is being cleaned and pumping will be resumed.

An interesting wildcat in the district at this time is the Unit Oil Company's Terrell 1, northeast of the field. It topped a gas sand at 430 feet, which has been threatening to blow out, topped the Mirando sand at 935 feet, the Pettus sand at 1010 feet, and is coring at 1130 feet.



Storm Does But Slight Damage

San Antonio, Texas.—The gulf storm of the past week did slight damage to South Texas drilling operations, except for several days of tie-up in activity. A few derricks in scattered areas were reported blown down, but in most cases they were on abandoned wells and were not sufficiently braced.

Rains were general, however, being a direct result of the storm, and many wells shut down due to the fact that source of water supply had become exhausted will be enabled to resume drilling. Fields where at least one derrick was blown down include Greta, Refugio, Coletto Creek, Pettus, North Pettus, and in some of the older areas where derricks have become weak.

Second West Cole Test Looks Good

San Antonio, Texas.—United Production Company's second test to the deep sand in the West Cole field near the town of Bruni, Webb County, looks much better than the discovery well. It picked up a sand series from 3395-3422 feet, flowed on a drill stem test in six minutes through ⅜-inch choke and is now in process of completion.

The first well did not go as deeply into the sand and made 60 barrels of 41 gravity oil per day after gas jets were installed.

Cole Petroleum Company is down 3000 feet on its R. Benavides 85, Callaghan Home tract, and likely will have the sand within a day or two.

Several more operations are expected to start following the outcome of the two wells now being drilled to this new horizone.

Slump Recorded in South Texas Completions

San Antonio, Texas.—A slump in new producers in South Texas occurred during the past week. This may have been accounted for in part by the coastal storm, which slowed drilling activity in several districts. The completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
BASTROP COUNTY—		
Marts and Beavens, A. Reyes 10, A. Litton sur	20	1768
BEXAR COUNTY—		
H. A. Pagenkopf, Maria Schultze 1, J. Montez sur	*	932
CALDWELL COUNTY—		
Wagener, Stieren & Daniels, Blackwell 1, Roe sur	*	2352
CALHOUN COUNTY—		
Southwest Oil Corp. (Heep), E. H. Welder 1-B, Day Land and Cattle Co. sur A 228	*	6224
DE WITT COUNTY—		
Keystone Royalty Co., L. T. Burns 1, N. McNutt sur	*	3850
DUVAL COUNTY—		
Humble Oil & Ref. Co., Paul White 31, Sec. 249	360	2248
Magnolia Petroleum Co., C. W. Hahl 1-C, Sec. 61	130	2377
Humble-Duval Ranch 3, Sec. 363	*	2297
Hahl-Burch 3, Sec. 43	¶5	2254
Reynosa Oil Co., Duval Ranch 7-D, Sec. 362	260	2296
GUADALUPE COUNTY—		
Holifield et al, Geo. Bailey 1, King sur	*	2203
HIDALGO COUNTY—		
Union Sulphur Co., American Rio Grande Land and Irrigation Co., Lot 2297, Blk 59, North Capisallo district	*	6431
KARNES COUNTY—		
Magnolia Pet. Co., Guy Porter 5, S. Morris sur	240	3655
LIVE OAK COUNTY—		
Houston Oil Co., Cartwright 25, Mt. Lucas	¶20-60	5258
MAVERICK COUNTY—		
Wright & Maxwell, L. Little 1, Sec. 65, Blk 5	*	1089
McMULLEN COUNTY—		
C. A. Hall et al, H. L. Lark, E. W. B. Scrugham sur	20	1054
C. R. Kennon, Tr., Lark 2, Blk 15, Scrugham sur	22	1058
Loma Oil Co., L. Jacob 102-A, Benham sur	*	907
NUECES COUNTY—		
Houston Oil Co., W. W. Walton 2	263	4868
SAN PATRICIO COUNTY—		
Plymouth Oil Co., Welder 1-B, Musquiz sur	*	5660
TRAVIS COUNTY—		
Humble Oil & Refining Co., Mrs. K. Wells 1, Kemp sur	*	1501
WILLIAMSON COUNTY—		
G. L. Rowsey, Tr., John Reiger 5-A, H. White sur	15	1050
ZAPATA COUNTY—		
Texas Co., Whitehead 47, C. Blanco sur	15	1248

*Failures; †Junked; ¶Million cu. ft. gas.

Two Important South Texas Wildcats Abandoned

San Antonio, Texas.—Two more important wildcats to the Edwards lime were eliminated from the list of possible producers in the Luling district, Caldwell and Guadalupe Counties, during the week. Both developed sulphur water after showing saturated cores.

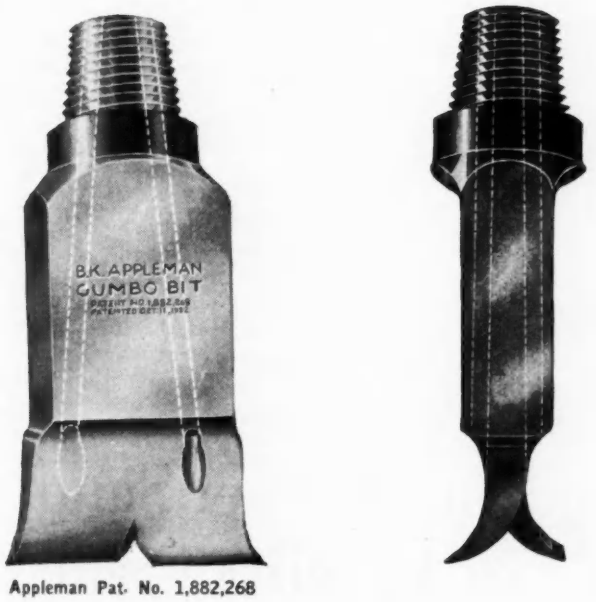
Wagener, Daniels and Stieren's S. M. Blackell 1, John Roe survey, in the Burdett Wells district, topped the Edwards lime at 2340 feet, cored ahead to 2352 feet, showing lots of saturation, but carrying some sulphur water. It has been abandoned. Another test likely will be drilled in the immediate area within the near future. The elevation of the well is 415 feet.

In Guadalupe County, Hollifield et al's George Bailey 1, J. C. King survey, near Kingsburg, drilled ahead to 2203 feet, flowed lots of black sulphur water, and has been abandoned. The Edwards was topped at 2190 feet. Another well is planned in the area.

Resumption of Activity In the Lucas Field

San Antonio, Texas.—Houston Oil Company's Cartwright 25, in the Mount Lucas field, Live Oak County, is a gasser spraying a small quantity of high gravity oil from the Pettus sand at 5258 feet. It has the sand at 5253-58 feet. The flow is estimated at 20,000,000 cubic feet of gas with 60 barrels of oil. Location has been made for Cartwright 26.

There is an apparent resumption of activity in the field, which possibly will



Appleman Pat. No. 1,882,268

The Appleman Gumbo Bit can be obtained from the following Licensees, or their authorized supply houses.

BEAUMONT IRON WORKS
Beaumont, Texas

GULF COAST MACHINE & SUPPLY CO.
Beaumont, Texas

BEAUMONT WELL WORKS
Beaumont, Texas

AUTHORIZED APPLEMAN BIT SERVICE CO., INC.
Houston, Texas

TEXAS IRON WORKS, INC.
Houston, Texas

AMERICAN IRON & MACHINE WORKS CO.
Oklahoma City, Okla.

result in the final determination of the Pettus sand structure, some 3000 feet below the regular gas sand of the field. There are several other wells in the Pettus sand, all being about of the same proportions of the Cartwright well.

Marine Oil Company has made a location and has started Ross Booth 1, Kivlin survey, on the east side of the field, headed to the Pettus sand. Lion Oil Refining Company's McNeill 1, James Curry survey, two miles northeast of the field, is drilling at 3320 feet.

Second Recent Strike Made at Colletto Creek

San Antonio, Texas.—Colletto Creek, Victoria County, is due for a rather heavy and immediate drilling campaign as a result of the second shallow strike during the past several weeks. A 2800-foot sand recently was opened with a 200-barrel pumping well. Now Nutex Oil Company's Zimmer 1, southwest corner of the east half of a 120-acre tract, Manchola Grant, is showing for an oil well at 2209 feet. It showed 300 feet of oil on a drill stem test and developed 225 pounds pressure in 12 minutes through ¼-inch chokes, top and bottom. Five feet of sand was taken from 2204 to 2209 feet. It is being drilled in.

Feltex Oil Company's Herman Dietzel 1 is coring for the sand around 2200 feet. In addition, tests are being started by American Liberty Oil Company on the Gaugler tract, M. B. G. Oil Company on the Prybil tract, and Plummer et al on the Zimmer tract; the latter being an offset to the Nutex well. Plummer also is preparing to work over Terrell 1, original discovery well of the field, a gasser spraying oil at 4437 feet.

Rights Granted for First Vanderbilt Townsite Test

Austin, Texas.—Imperator Oil Company has won the right to drill the first well in the Vanderbilt Townsite in Jackson County.

At a hearing before the Texas Railroad Commission several operators with townsite tracts were denied permits to drill on these small blocks, but this order was enjoined by Judge J. D. Moore in the 98th District Court in the instance cited above. No other denials were affected.

At the trial of the case Jack Life, attorney for the operators, presented abstracts to show that the property had been originally subdivided in 1905, and that the title had been vested in the present owner since 1916.

He contended that the owner had a vested right to recover the oil from the tract, 140x150 feet, which contention was sustained by the court.

The Railroad Commission has succeeded in preventing such drilling in the Tomball townsite in Harris County, and hoped to have only one well on 20 acres in the Jackson County townsite.

Second Stratton Field Test Is a Failure

San Antonio, Texas.—Stanolind Oil & Gas Company's Stratton 2, Nueces County wildcat, failed to make a producer in the 4800-foot sand where the Stratton 1, one mile southwest, several years ago made a gasser spraying a small quantity of distillate and opening the Stratton field. Stratton 2 is the second well to be drilled on the prospect.

At 4800-17 feet, it developed 50 pounds pressure and six fourbles of salt water in 10 minutes. It is now reaming at 5024 feet. The well is in the northeast quarter of Section 13, Abajo Grant.

To the north in the King field, another Stanolind discovery, Nutex Oil Company (John Camp) has plugged back King 1, Section 24, from 6021 feet to 5455 feet, after making a large quantity of gas and salt water. It is waiting on cement.

305 New Permits Issued in Texas

Austin, Texas.—Oil operators were granted permits to drill 305 new wells in Texas last week, almost double the number that were filed for the two weeks preceding.

The approval of many exceptions to the spacing rule in East Texas accounted for most of the increase, as a total of 143 permits were allowed in this field alone. The major companies received a total of 78 permits, of which 38 were obtained by the Arkansas Fuel Oil Company.

Seventy-six of the wells will be drilled in Gregg County, 49 in Rusk County, 15 in Upshur County and three in Smith County.

Permits were granted for the drilling of eight wells in the new Cayuga area in Anderson County. This is the largest number ever granted for the fields in this county in one week.

A sharp decline was reported in North Texas, with only 36 permits filed. There were 10 in Wilbarger County, the most in any one county in the district, while Archer County reported only seven.

The Gulf Coast and Southwest Texas districts listed 32 permits each, which were widely separated

In the Panhandle area there were 20 permits granted, concentrated largely in Gray, Hutchinson and Wheeler Counties. West Texas reported 10 permits for the entire district.

Second and Deeper Sand Found in Angelita Field

San Antonio, Texas.—A second and deeper oil producing horizon was being developed in the Angelita field of San Patricio County late in the week. Atkins and O'Neil and Continental Oil Company's E. Welder 1-A, located in the eastern portion of Block 2, Villareal survey, 2000 feet southeast of the discovery well, set casing and was drilling out plugs at 5453 feet, nearly 100 feet below the level of the only other producer in the field. It topped the sand at 5441 feet, cored to 5447 feet, still in sand, and made a drill stem test from 5435-47 feet, recovering five fourbles of oily mud. Casing was set at 5440 feet. It failed to pick up the regular horizon. The well is bottomed in sand. Elevation is 7 feet ground and 17 feet derrick floor.

E. Welder 2, located 932 feet southeast of the discovery well got the regular producing horizon at 5368 feet, cored ahead to 5383 feet and ran a drill stem test from 5372-83 feet, developing 200 feet of oil and 550 pounds pressure in seven minutes. The horizon was sandy shale as compared with sand in the first producer. It also is drilling out plugs.

The Sinton field to the north does not look too encouraging. Although Plymouth Oil Company's Welder 2-A, 1320 feet due east of Welder 1-A, discovery well, was structurally 12 feet lower than the first producer, it showed mainly gas on a series of drill stem tests starting at the top of the sand at 5427 feet. At 5454 feet, it showed both oil and sand water and was drilled ahead to 5548 feet, plugged back to 5300 feet and is now drilling ahead at 5360 feet and will recore the sand. The best this well can expect is a gasser spraying oil, from present appearances.

The structure will likely be rather large, however, as is indicated by Welder 1-B, located 3500 feet north and 45 degrees west of Welder 1-A. This well has the sand at 5441-50 feet, showed 210 feet oil and some salt water on a ten minute drill stem test. It drilled to 5660 feet and has been temporarily abandoned.

Conroe Trend Fields Do Not Have Uniform Yield

Houston. — Production along the Conroe trend in Texas has not been uniform by any means. Discovery of the Conroe field apparently opened a large number of known and suspected domes to drilling, and the Cockfield loomed as a source of oil along a belt of considerable length. It has developed that Conroe is by far the best of a number of fields and semi-discoveries along the belt.

Located along the fringe of foothills roughly paralleling the coast line, the belt commonly known as the Conroe trend has been a tricky strip for many years. This belt crosses many level areas, but it is for the greater part partial to the hilly sections.

Tomball, located a few miles east of Conroe, promised much when first opened, but the field has not been profitable to most operators. Production is found around 5500 feet, and the initial yield has been low. A faulted condition has been partially responsible for this poor showing. Besides two larger faults, several cross faults affect the field. First completions had a high gas-oil ratio, and a few gas wells were finished in all parts of the field.

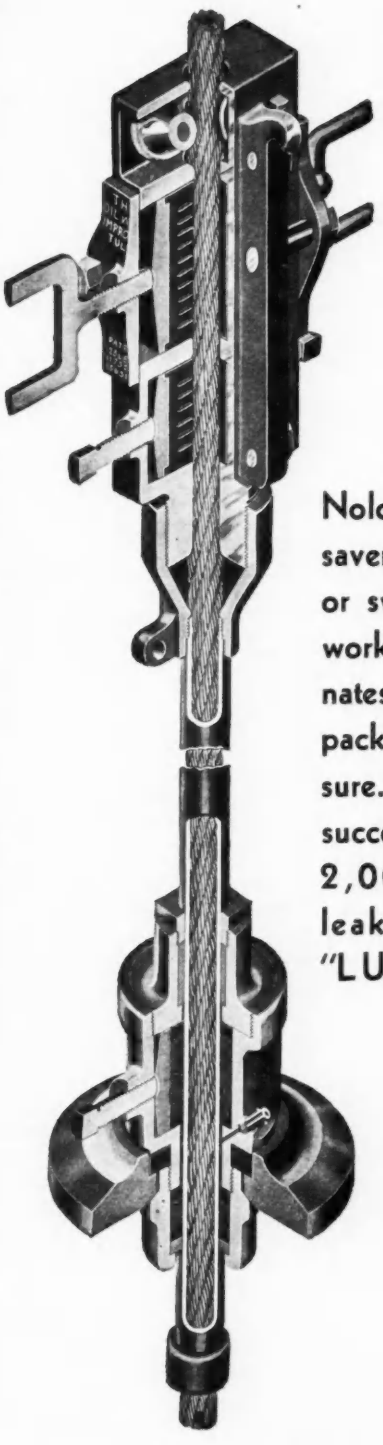
The Tomball field is being better defined, and it may eventually be possible to avoid the bad gas areas. There is a possibility that production may be developed to advantage around a circle, but no uniformity along this line has yet been established. A slightly more domal tendency is present than at Conroe, even though production is deeper than in the Montgomery County field.

Average initial production at Conroe has been less than one-third of the average for first Conroe completions. Drilling costs have been higher, however. Tomball crude is in demand, and operators are willing to risk the initial yield from a very thin producing zone in an effort to develop their leases to advantage.

The Cleveland and Splendora areas have not made impressive showings, and both fields look small. The latter might be classed as only semi-proven. Raccoon Bend, also in the same trend, may make a uniform producer in the Cockfield but completions do not resemble first producers at Conroe.

Conroe seems to be the center of production along the trend which supposedly extends into Louisiana toward the east. As fields are approached either to the east or west, they do not measure to the high standard set by the premier area of all Gulf Coast fields.

NOLOS PLUNGER OIL SAVER



The Nolos Oil Saver is the most economical oil saver yet devised for drilling gas or oil wells having a heavy back pressure.

●

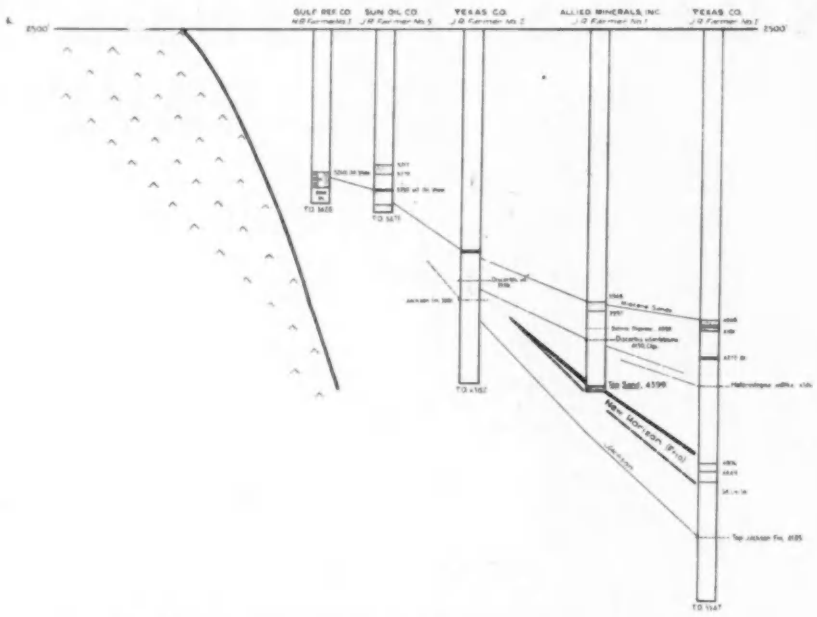
Nolos is the only plunger type oil saver that serves equally well for drilling or swabbing. Its hollow polished rod, working through metallic packing eliminates excessive wear on rubbers and the packing can be changed under pressure. The Nolos Oil Saver has been successfully used in drilling against 2,000 pounds gas pressure without leaking, and it can be used with "LUBRICATING-IN" equipment.

●

This type of oil saver has proved particularly efficient in the Panhandle. If you are drilling heavy gas, write us for full information about "LUBRICATING-IN" equipment.

THE OIL WELL IMPROVEMENTS CO.

TULSA, OKLAHOMA



Cross section of a portion of the east flank of Boling Dome, Fort Bend County, showing the Frio as a probable new producing horizon in Allied Mineral's J. R. Farmer 1. Four wells drilled in the vicinity are also shown. Top of Jackson in Texas Company's J. D. Farmer 1 should be shown at 5185 feet, and not at 4185 feet.

Frio Production May Be Developed at Boling Dome

Houston.—Possibility of production from the Frio on the east flank of Boling dome has stimulated interest in a Gulf Coast field that has been a somewhat questionable producing area since its discovery in 1925. The new prospective oil bearing zone has been found under interesting and unusual circumstances, since several wells on the east flank failed to develop a satisfactory production at various depths.

The well promising to open the new producing horizon is Allied Mineral's (J. E. Sieber) J. R. Farmer 1, which has been drilled to 4424 feet, after topping the Frio (?) at 4419 feet. Another five feet will be opened before a production test is made. On a drill stem test from 4399 to 4424 feet, the well made 24 fourbles of 24.8 gravity oil and four fourbles of mud in 10 minutes, with ⅜-inch choke on bottom and ¾-inch choke on top. No water was present. Such an encouraging recovery points to an important discovery.

The formation resembles the Frio, since it is practically non-fossiliferous. However, the oil zone may prove to be the Marginulina, which is the base of Middle Oligocene. The Frio has been productive in such fields as Barbers Hill, Pierce Junction and Blue Ridge, while the Marginulina has produced in many Gulf Coast fields.

The well is located in the James Scott Survey, Fort Bend County, and was started originally as a Cockfield test. Geologists locating the well believe the Jackson or Cockfield will be productive below the Frio.

Leases on the east flank of Boling dome are held by Sun Oil Company, The Texas Company, Humble Oil & Refining Company and others.

One deep well was drilled on the flank, but oil in the Frio was not developed. It is believed that production might have been developed, had a test been made. The formation apparently is not present near the salt plug, having been laid down on the flank, and feathering out as the plug is approached. The discovery is important, and may place a new value on outside leases.

Fine Sand Prevents Sour Lake Completion

Houston.—No important change in the status of deep Sour Lake tests was reported during the past week. Alpha Petroleum Company's W. Weiss Estate 1 will be tested at 7012 feet if screen can be set and the hole placed in condition. Some promising sand was cored near bottom in this well, but it has prevented setting screen.

Pharr et al's Bernard 1, east of production, is still shut in at 7060 feet. This well was capable of making several barrels per day, but did not produce steadily.

The Cockfield sand has possibilities at Sour Lake, but difficulty of completing wells around 7000 feet has been unusual. A high pressure sand condition has prevented running screen, while mechanical trouble has also been a factor. The sand is very fine and breaks to prevent placing the screen on or near bottom.

Splendora Well Finds Hockleyensis Formation

Houston.—Humble Oil & Refining Company topped the Hockleyensis at 4939 feet in Anna M. Platte 1, wildcat in the Splendora area, Montgomery County. The well is apparently running slightly low. This formation was topped at 4909-39 in Steen Drilling Company's well drilled nearby. Anna M. Platte 1 has an elevation of 131 feet, and is now drilling below 5120 feet.

Discovery well in this area was Steen Drilling Company's Long Leaf Lumber Company 1, which was completed in the Cockfield sand at 5816-5824 feet with an initial production of 45 barrels of 65 gravity distillate in 12 hours, and a large flow of gas. The structure is apparently of the domal type, possibly deeply buried over salt.

Gas Showing Is Found In Grimes County Wildcat

Houston.—A showing of gas was encountered between 3049 and 3060 feet in James H. Woodward's Hamilton 1, Grimes County test located 4½ miles northwest of Smith and Cooper's Post 1, which was abandoned after showing gas at 3418 feet. Hamilton 1 is located in the O. Hill Survey. The well was started as a 5000-foot Cockfield test. The Fayette was topped at 1724 feet. The area near Richard has been under consideration since discovery of the Conroe field, but little drilling has been done.

Crooked Hole Case To Result in New Rules

Austin, Texas.—Adeltex Oil Company has been awarded a judgment in the 98th District Court of Travis County which will permit producing of its Llewellyn No. 2, the famous Conroe "crooked" hole, deviated 300 feet to make a producing oil well out of a water well originally completed on the edge of the field.

The Texas Railroad Commission last week had prepared the first draft of a new deviation rule to be applied over the state generally, which is designed to prevent the repetition of such a case.

There are three principal differences between the proposed rule and the rule now in effect.

1. No intentional deviation, such as was done in the Adeltex well, is permitted, without notice in writing to the commission and "proper showing."

2. A well on a tract of 20 acres or more is permitted to deviate five degrees from the vertical, but those on tracts of 10 to 20 acres may not deviate more than four degrees while those on tracts of 10 acres and less must not deviate more than three degrees.

3. Surveys must be made at 500 foot intervals in fields; where the pay is encountered from 1000 to 2000 feet these surveys shall begin not lower than 500 feet, while in the deeper fields they must begin not lower than 1000 feet. If the survey shows excessive deviation, correction to the vertical must be made within the next 500 feet.

The propriety of the first requirement is readily apparent as a deterrent to operators who would drill on the plan instituted by the Adeltex Company under the old rule which said nothing about whether the deviation was accidental or intentional. The rule, of course, was intended to prevent unreasonable deviation resulting from careless operation, but this was nowhere specified.

Several Gulf Coast operators pointed out that such intentional directional deviation is often good operating practice when it becomes necessary to sidetrack a string of lost tools, avoid unusually hard formations, or for other causes of this nature. For that reason provision is made for the allowance of exceptions after a proper showing. This does not mean ten days' notice and hearing, but only a reasonable demonstration that the operator has encountered a problem to which directional deviation is the proper solution.

The purpose of the second requirement, which has the effect of forcing an operator to drill a straighter hole on the smaller tracts, is to require the hole to be bottomed beneath the lease.

The effect is to prevent, possibly, the drilling of wells on very small tracts. This would be the result in those fields where wells are deep and straight drilling difficult. The necessity for frequent surveys and the subsequent correctional deviation might raise costs to a point that would make such drilling unprofitable.

This plan was first incorporated in the commission's order on the Vanderbilt field. The entire field, with the exception of 36 small tracts in the townsite, are owned by one company. The production is fairly deep, and the operation of this rule may operate to prevent the drilling of wells on these tracts if the 20 acre spacing rule proves vulnerable.

The third requirement of surveys at 500 foot intervals is designed to prevent another condition which arose in the Adeltex case. Representatives of the company pointed out that the rule said that deviation greater than five degrees from the vertical should not be permitted. They pointed out that, from the surface to the bottom of the hole, the well deviated no more than five degrees. They admitted that at some point the casing was as much as 20 degrees of vertical.

The new rule would prevent such an operation by frequent checks and the highly important requirement that correctional deviation to the vertical within the next 500 feet must be made if a survey shows the well out of line.

The commission now has this rule under advisement, and has invited the most prominent engineers and attorneys in the Texas oil industry to make any suggestions that they feel would be helpful.

Gas-Oil Ratio Reduced in Troublesome Conroe Well

Houston.—Through use of a special electrical logging device, Tide Water Oil Company (Strake) has been able to locate and block off a troublesome gas sand in Dean 8 at Conroe. The well had been producing with an excessive gas-oil ratio for some time, and it was necessary to shut it in for this reason. Gross gas production allowed was about 86,000 cubic feet, based on a gas-oil ratio of 1/2000. Gas production became so high that it was possible to produce only five barrels of oil with 86,000 cubic feet of gas.

The electrical logging device was run, and 31 feet of sand found between

It's The

TREMENDOUS

HYDRAULIC

SUCTION

Created by The Cavins that does the work.

The CAVINS

3 TOOLS IN ONE

Here is what one user says about The Cavins:

"It cleans out the perforations as no other bailer can because it has the suction to pull the sand out."

Write or call us for descriptive bulletin and other performance data.

The CAVINS Company

2853 Cherry Ave. Telephone: 414-14

Long Beach, California, U. S. A.

Branches at Oklahoma City, Okla., Houston, Texas.

5060 and 5106 feet was not known to exist. Five feet of the upper sand was blanked off, and the well was again brought in with an initial production of 20 barrels per hour through a quarter-inch choke and a satisfactory gas-oil ratio. Shutting off the gas and increasing oil production was an important engineering accomplishment.

Drilling activity at Conroe has been reduced to a limited number of wells on leases and small parcels that did not require early development. The field is almost completely developed.

New Cockfield Producer In Raccoon Bend Field

Houston.—Another Cockfield sand producer in the Raccoon Bend field, Austin County, has been completed by Humble Oil & Refining Company, McCasland 3 establising an initial flow of 34 barrels per hour from 4130 feet through a 3/8-inch choke. The well is located in the W. C. White survey, and is a direct offset to Zeiske No. 1, which was the first Cockfield producer.

The Raccoon Bend field is being recognized as a major Gulf Coast oil reserve. The three main producing zones are the Gutoskey, or Whitsett, found around 3000 feet; the Grawunder, or McElroy, topped at 3250 feet, and the Cockfield, which is found from 3800 to 4300 feet. Thickness of the Cockfield in this field is estimated at 26 feet.

Humble Oil & Refining Company is the sole operator and controls all productive acreage. Cockfield development has become the center of activity.

Deep Saratoga Test Is Abandoned At 5627 Feet

Houston. — Sinclair-Prairie Oil Company has abandoned Teel 1, southeast flank test at Saratoga, after drilling to 5627 feet and finding the Cook Mountain dry. The well is located in the T. A. Gains Survey. A drill stem test was made at 5280 feet in hard sandy shale and sand, but recovery was only three fourbles of salt water. Sandy shale predominated below 5300 feet.

E. W. Skinner Oil Company abandoned Sessler 3 at 2230 feet. Top of cap rock was found at 2185 feet, and the well did not look especially promising at any depth.

The Saratoga field has been a prolific producer from Pliocene and Miocene sands between 500 and 2000 feet, and from deeper sands immediately below 3000 feet. Deepest well drilled was abandoned at 6270 feet.

Bosco Field Looms as Leading Louisiana Area

Lake Charles, La.—The recently discovered Bosco oil field, Acadia and St. Landry Parishes, Louisiana Gulf Coast, where promising acreage is controlled for the most part by Superior Oil Company of California and Pure Oil Company on a joint basis, is fulfilling expectations that it will become one of the most important fields on the Gulf Coast.

Through recent completion of the joint interests' E. Mire 1, Section 33-8s-3e, the field has been proven for a distance of 1½ miles along a virtually straight line running east and west. Geophysical data have indicated the structure to be a large, deep seated salt dome, and it may reasonably be expected that the field will prove approximately as extensive in the north-south direction as in the east-west. In such event, the field would have a productive area of around 1500 acres, and would be a coastal field of the first order. The oil bearing sands are relatively thick.

The productive area at Bosco may in reality prove considerably greater than the 1500 acres which seem more or less assured. For the wells that have been completed have not encountered salt water, and production may be established considerably father out than the present outside productive locations.

The Bosco field gives indications of proving very similar to, if not more productive, than the Iowa field, about 50 miles due west, on the Jefferson Davis-Calcasieu Parish line; and Iowa is rated as one of the best Gulf Coast fields, with productive area definitely proven to be at least 1200 acres, and likely to prove greater; and with ultimate oil recovery estimated to be at least 50,000,000 barrels.

The newest Bosco oil well, E. Mire 1, of the Superior-Pure joint interests, flowed 1096 barrels of high gravity oil the first 24 hours through a 17/64-inch choke, showing 1410 pounds pressure on tubing and 1600 pounds on casing. Production is from sand at 8067-88 feet. The well is about one half mile west of the discovery well, and is the field's third oil well. The second completion was about one mile east of the discovery well. The first two wells are producing from around 7850 feet.

The wells are producing from the Discorbis zone of the Oligocene, and the oil tests around 39 gravity. While the new well was flowing around 1000 barrels oil daily, the discovery well was yielding 850 barrels daily and the second completion 1750 barrels.

The structure was indicated by seismograph work done by Pure Oil Company nearly five years ago. Pure Oil Company assembled a 6500-acre lease block, and held it undrilled until this year. It then made a deal with Superior Oil Company of California, turning a one half working interest in the property to that concern and retaining a similar interest. The joint interests are now going ahead with an aggressive drilling campaign, which is necessitated in order to keep leases from expiring. The two companies are operating six drilling rigs, and four wells are nearing the pay sands. Since completion of E. Mire 1 they have also made locations for 10 more wells.

Besides the Superior-Pure interests the only company with acreage apparently proven is Standard Oil Company of Kansas with a drilling well on a 45-acre lease. Humble Oil & Refining Company and Shell Petroleum Corporation also hold large blocks outside the Superior-Pure block, and both are working in the area now with seismographs and torsion balances.

The 10 new locations announced 10 days ago by Superior Oil Company will be drilled as quickly as possible. This company has made remarkable time in drilling first producers in the field, one well having been drilled to 7000 feet in 18 days. Such equipment as 14x14 drilling engines, 350-pound boilers using super-heated steam, and double draw works is being used.

Arceneaux 1 is drilling in hard sand at 8485 feet, and may be the next completion. Lovnatti Richard 1 is drilling below 8050 feet, while M. Savoie 1 is drilling in hard shale at 8100 feet. Leo Kahn is reported to be running low at 7215 feet.

Rapides Parish Wildcat Seeks Conroe Trend

Lake Charles, La.—Influence of the Conroe trend may be seen in a new Rapides Parish location, C. D. Lowe's Barrett 1, 330 feet northwest of southeast line, and 880 feet northeast of southwest line of Section 40-5n-1w. Limited drilling in this part of the state does not permit correlation with wells in Texas, but it is believed that

formations present in Montgomery, Polk, Tyler and Liberty counties, Texas, may also be found in sections of Louisiana remaining undeveloped. The few wells drilled in Rapides Parish have been mostly shallow and inconclusive. The district lies northeast of the prolific producing section running east and west across several counties.

Gulf Coast Completions Continue at Even Rate

Houston.—Twenty wells were completed along the Texas Gulf Coast during the week, but of this total only 13 were oil wells. The seven failures were abandoned in all parts of the district. Total initial production of the successful completions was 5920 barrels. No outstanding producers were reported. The full Texas Gulf Coast completion list follows:

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBERS HILL—		
Sun Oil Co., Higgins 5	625	4151
Yount Lee Oil Co., Chambers 24	500	4025
BLUE RIDGE—		
Joe Moffet, Hobby State Farm 1	*	517
CONROE—		
Gulf Coast Dr. Co., Hensley 3	500	5116
Humble O. & R. Co., Madeley 39	1275	5139
Strake Oil Corp., Hamman 3	*	5170
ESPERSON—		
General Crude Oil Co., Moores Bluff 12	250	3004
HIGH ISLAND—		
Yount Lee Oil Co., Smith 1-B (wo)	100	5191
HULL—		
Republic Prod. Co., Dolbear 136	125	2367
Gulf Prod. Co., Phoenix 103	225	4075
HUMBLE—		
Rio Bravo Oil Co., Fee 8	*	4660
LIVINGSTON—		
T. D. Humphrey, Orton & Mangan 1	*	Icn
MANVEL—		
The Texas Co., Houston Assoc. 2	*	4218
PIERCE JUNCTION—		
Hamil & Hamil, Jones 2-A	200	3432
PORT NECHES—		
The Texas Co., Orange National Bank 1 (wo)	100	4799
RACCOON BEND—		
Humble Oil & Ref. Co., Effie Kerns 3	40	4685
MARKHAM—		
Powers Prod. Co., Meyers 2	540	3399
SARATOGA—		
E. W. Skinner, Sessler 3	*	2180
THOMPSON—		
Gulf Prod. Co., Hamerstrom 4	1440	5300
HARRIS COUNTY—		
Emerald Pet. Co., Griffith 1	*	4615

*Failures; †Junked; ¶Million cu. ft. gas.

Welsh Flank Test Will Set Whipstock Above Plug

Lake Charles, La.—Tide Water Oil Company has plugged back to 5100 feet from 6107 feet in Bourgeois 1, flank test on the Welsh structure, about midway between the Roanoke and Iowa fields, and is setting whipstock near the plugged depth. This well is considered one of the most important in Louisiana, and showed 150 feet of clean oil on a drill stem test at 5370 feet. The Welsh field appears to be in line for deeper production, due to its relationship to Roanoke and Iowa. Burgeois 1 was originally started as a 7000-foot test, possibly to be drilled to the Marginulina. Deepest well previously drilled in the field was H. T. McClain's Atterbury 1, which was abandoned at 6075 feet. This section of Louisiana is being recognized as an important deep oil reserve, and leasing has been active.

Seven New Louisiana Coast Oil Producers

Lake Charles, La.—Of nine wells completed during the past week along the Louisiana Gulf Coast, seven were oil producers with a combined initial production of 2290 barrels, and two were failures. Gulf Refining Company's Lutcher-Moore 35 at Starks was the best well of the week, with an initial flow of 1000 barrels daily.

The full list of completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
CAMERON MEADOWS—		
Burton Sutton Oil Co, School Land 1, (wo)	125	4381
HACKBERRY—		
Yount Lee Oil Co, State Land 14	250	4604
Gulf Land 11	300	6098
LOCKPORT—		
Magnolia Pet Co, Farquhar 8, (wo)	30	6718
Miller 26	60	4388
STARKS—		
Gulf Ref. Co, Lutcher-Moore 35	1000	3500
SULPHUR—		
Union Sulphur Co, Fee 799	525	2997
BEAUREGARD PARISH—		
F. W. Martin, et al, Cochran 1	*	6526
VERNON PARISH—		
Anderson & Kerr Dr. Co, Nona Mills 1	*	4094

*Failures; †Junked; ¶Million cu. ft. gas.

All North Louisiana Completions Failures

Shreveport, La.—All five completions in North Louisiana last week were failures.

Gaskill et al's Jim Guy 3, NE cor NW SE Section 3-11-13w, De Soto Parish, tested dry at a depth of 1735 feet, after using acid, and was abandoned.

Completions last week in North Louisiana follow:

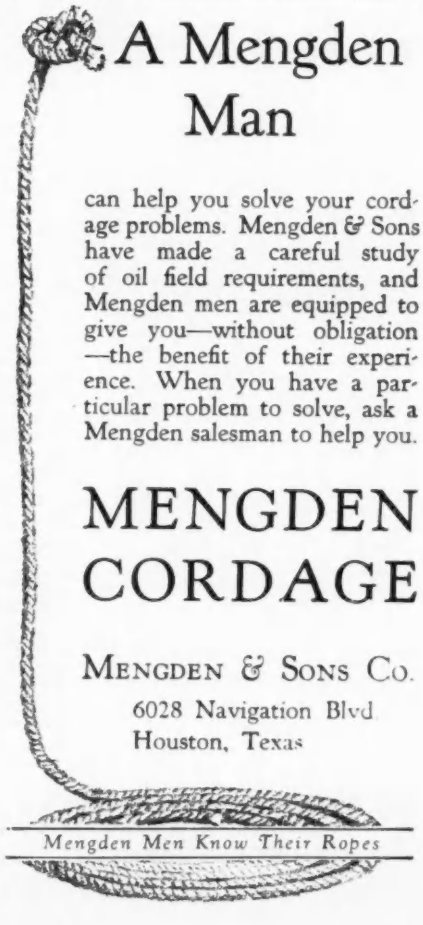
Company, Well and Location	Init. Prod. Bbls.	Depth
DE SOTO PARISH—		
Gaskill et al, Jim Guy 3, nec nw se 3-11n-13w	*	1735
LINCOLN PARISH—		
Eastern Texas Production Co., Givens Estate 1, swc ne 2-17n-4w	*	3503
SABINE PARISH—		
G. W. Longley et al, Peavy Wilson Lbr. Co. A-1, nec 16-5n-9w	†	4203
WEBSTER PARISH—		
M. J. Kissick, Tr.'s O. M. Slack 1, nwc sw nw 18-23n-10w	*	2738
WINN PARISH—		
Red River Refining Co., Tremont Lbr. Co. 1, sec ne ne 35-11n-1w	*	1611

*Failures; †Junked; ¶Million cu. ft. gas.

Old Florida Test Is To Be Drilled Deeper

Miami, Fla.—Wm. G. Blanchard, development engineer, gave out some interesting information recently regarding activities at Miami Oil Company's Chevelier Corporation No. 1 Dade County well. This well is in the very heart of the Florida Everglades and with standard equipment was bottomed at 4570 feet a little over a year ago. At that time eight-inch casing was landed at 2000 feet and straight reaming was being carried on to land six-inch at the bottom. With all the six-inch pipe out of the hole a 48-foot string wedged and the rope was cut off at the socket at 4337 feet. In fishing for the first string a second 48-foot string wedged and the rope was again cut at the socket at 4326 feet. Further fishing operations succeeded in wedging a third string 56 feet long and for the third time the rope was cut at the socket, this time at 4300 feet.

Since all this trouble started the well has been refinanced so as to go to 6000 or 7000 feet if the lost tools can be removed. To this end Dusky Freeland of Tulsa was brought over about three weeks ago and rebuilt the rig for further fishing operations. The hole which had been standing open for over a year


A Mengden Man
can help you solve your cordage problems. Mengden & Sons have made a careful study of oil field requirements, and Mengden men are equipped to give you—without obligation—the benefit of their experience. When you have a particular problem to solve, ask a Mengden salesman to help you.
MENGDEN CORDAGE
MENGDEN & SONS CO.
6028 Navigation Blvd
Houston, Texas
Mengden Men Know Their Ropes

was found clear, down to the lost tools at 4300. As the horizon is anhydrite and lime Freeland decided to use acid in freezing the tools; a technique he has been using since 1924. Four carboys of acid completely cleaned up around the first string and as work is progressing satisfactorily it is hoped that all three strings will be removed within the coming few days.

East Coast Oil and Gas Company's Warick 1, six miles south of Miami, is shut down at 5432 feet awaiting refinancing and the installing of rotary equipment including a new derrick. This well has six-inch casing landed at 5417 feet.

Malone and Pope of Tampa have erected a new derrick near Baum, Hillsboro County, Florida, and are hoping to spud in at an early date.

Only One New Start in Arkansas

El Dorado, Ark.—There was only one first report added to Arkansas drilling operations last week as follows:

In Calhoun County, R. J. McMurry et al made location for their Calion Lumber Co. 1, SWc SW NE Section 3-16-14.

Lea County Wildcat Encounters Sulphur Water

Hobbs, New Mexico.—The Texas Company's J. S. Lea 1, a wildcat producer that has been in process of completion since last April encountered sulphur water at 3688 feet, or 23 feet below sea level. The well averaged 123 barrels of oil and 25 barrels of sulphur water daily on a four-day test, and has been ordered plugged back to 3600 feet. Situated near the the center of a 20-section block, and in the SWc NW Section 14-20s-34e, this wildcat, 2½ miles north of the Lea-Lynch field, Lea County, encountered first oil production in brown sand lenz in the regular lime section at 3556 feet, or approximately 100 feet higher structurally than the producing horizon in the Lea-Lynch field. The gravity of the oil from the upper horizon was 37.7 degrees. The company, drilling on government permit, is allowed 640 acres for a primary lease, which carries five percent royalty, by the completion of this well as a producer.

Inadequate water supplies has greatly retarded projected drilling campaigns in the Eunice and Cooper areas, Lea County, and a number of tests rigged up are standing idle until water is obtainable. In the Cooper area, Phillips Petroleum Company installed a private water supply, and is drilling on two of its four announced locations. General Crude Oil Company and Magnolia Petroleum Company, owners of the two completed oil wells are drilling below 2000 feet on their third test. Stanolind Oil & Gas Company shut down for water after drilling out cement plugs from surface pipe, while tests by Humble Oil & Refining Company and The Texas Company have not progressed beyond the rigging up.

Slump Follows Oregon Gasoline Tax Raise

Oregon, the only state to raise its gasoline tax rate last year, was the only state west of the Mississippi River to experience a decrease in gasoline consumption during the first three months of 1934, it is shown in a study of motor fuel consumption by states made by the American Petroleum In-

BALDWIN CHAINS

Eliminate Interruptions

Field interruptions are cut down to a minimum by the use of Baldwin Super Service Oil Field Chains. The new staggered assembly (alternate pins driven in from opposite sides) makes them the strongest, longest-wearing Chains ever produced. It gives them balance and protection from wear. It makes speedier field repair possible.

No. 1030 SS (API-3)
No. 1240 SS (API-4)
Available in All Oil Fields

Mid-Continent Distributors:
Frick-Reid Supply Corp.
International Supply Co.
Woodward, Wight & Co.
T. T. Word Supply Co.
Louisiana Supply Company

Pacific Coast Distributor:
Petroleum Equipment Company

Factory Representative:
Geo. J. Fix Co., Dallas, Texas

BALDWIN-DUCKWORTH CHAIN CORPORATION
361 PLAINFIELD SREET SPRINGFIELD, MASS.
FACTORIES AT SPRINGFIELD AND WORCESTER, MASS.

Rocky Mountain States Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GLACIER COUNTY (Cut Bank Field)—		
Santa Rita O&G Co, Hardy 2, sw ne 27-35-6w	265	2900
R. C. Tarrant, Jones 1, sw se 31-4n-5w	250	2756
Texas Co., Antrim 4, ne se 34-35n-6w	229	2918
Nadeau Bros, Van Demark 3, sw nw 35-35-6w	165	2897
Alberta Pacific Cons. Mattson 4, sw nw 14-34n-6w	128	2899
Montana Power Gas Co, Fuller 1, c se 17-33n-5w	100	2462
CARBON COUNTY—		
Minnesota-Flatwillow Pet Co, Corbett 1, sw sw se 1-6s-23e	*	1320
TOOLE COUNTY—		
Eagle Petroleum Co, Taugen 4, sw nw 12-35-3w	60	1420
Frazier et al, Johnson 1, ne ne 29-33n-2e	¶4½	880
PHILLIPS COUNTY—		
Montana Utilities Gas Co, Styles 1, cnw nw 23-31n-34e	¶1½	800
PONDERA COUNTY—		
California Co, Northwest Properties 1, sw ne 20-27n-4w	*	2622

WYOMING

WESTON COUNTY—		
Chadron-Osage Oil Co, Fee 4, cnl ne sw 13-46n-64w	¶1	1450
C. L. Nichols, Osage 5, se nw 8-46n-63w	*	450

*Failures; †Junked; ¶Million cu. ft. gas.

stitute. Motorists in Oregon used 1,306,000 gallons less during January, February and March, 1934, than the 23,692,000 gallons they consumed in the corresponding months of 1933.

The figures apparently bear out the assertion of tax experts that a one-cent rise in the tax rate decreases consumption about five percent. Last year Oregon raised its state gasoline tax to five cents from four cents a gallon. The federal levy increases the present tax total to six cents.

In states bordering Oregon, gasoline consumption jumped from 6 2/3 percent to 77 percent over the first three months of 1933. In California the increase was 19,748,000 gallons, or 6 2/3 percent; in Washington, 8,081,000 gallons, or 16 percent; in Idaho it jumped 77 percent, an increase of 5,079,000 gallons; and in Nevada 21 percent, or 753,000 gallons.

California Drilling Is At Three Year Peak

Los Angeles. — There are more wells drilling in California than for slightly more than three years, indicating conclusively the upturn in oil field activity has returned to stay, at least for sometime.

According to A. P. I. figures for June, there were 200 wells actively drilling at the close of that month, compared with 114 for the same month in 1933, while 108 were drilling in June, 1932, and 185 in same month in 1931. In May, 1931, slightly more than 200 were drilling.

For the first six months of 1934, there were 183 oil wells completed, compared with 83 for the same period last year, an increase of exactly 100.

It is indicated that drilling activity will show a gradual increase during the coming months.

Athens Test May Be Completed As Gasser

Los Angeles.—G. W. Houser's No. 2 well in the Athens area, which blew out last week, is being cleaned out and an effort is to be made to make a gas well. The hole was drilled several years ago to 4017 feet by Big 5 Oil Company and has been idle for months. A string of 8¼-inch casing is cemented at 3984 feet. If the drillers succeed in making a gas well, it is possible other old holes in this area will be worked on.

C. C. BROWN, assistant state proration umpire for Oklahoma, is recuperating in Ponca City, after an appendicitis operation performed there on July 14.

California Shut-In Wells Are Opened

Los Angeles.—A number of old heavy oil producers are being opened in California, in some instances to get the oil, and in others, to establish potentials. As as example of this practice, Associated Oil Company in June restored 31 old shut-in wells to production at West Coalinga. These wells averaged 14 gravity oil. One other company opened one well in this field which produced 20 gravity oil.

Eight of the Associated wells established a potential of 25 barrels, nine were good for 40 barrels, and 13 started out producing at a rate of 95 barrels each. Some of these wells were again shut in.

During June, 10 old wells in the Midway-Maricopa area were opened for from 20 to 30 barrels each. Seven produced 13 gravity oil and two pumped 23 gravity oil.

An old well at Devil's Den was restored for 95 barrels of 19.5 gravity oil. Another shut-in producer at Playa del Rey established a potential of 20 barrels on the pump.

In a check of American Petroleum Institute monthly reports for California, Coalinga is shown to have had 897 producers at close of last January, dropping to 852 in March and April, and increasing to 962 at the close of last June.

Four Kettleman Tests Among California Permits

Los Angeles.—Of the 14 permits to drill new wells in California filed week ending July 14, four are for Kettleman Hills. Union Oil Company is starting King 8 in Section 29-21-17, while Standard Oil Company will drill Nos. 21, 78 and 38, the first two in Section 19-21-17 and No. 38 in 21-21-17.

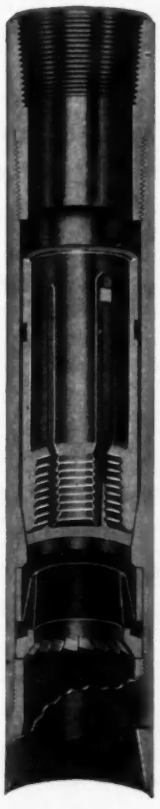
Two new wells are starting at Inglewood, two at Mountain View and one each at Dominguez, Piru, Mesa and Edison. One wildcat was listed for Orange County.

Deeper Production Indicated for Inglewood

Los Angeles. — The finding of nearly 400 feet of formation, mostly saturated oil sand, from 4200 feet to 5602 feet by Plymouth Oil Company in its Pollard 1 at Inglewood, gives promise of the early proving of a deeper and prolific producing zone in this old Los Angeles Bisan field.

The drill was stopped at 5602 feet and by the use of formation testers, it developed that the zones from 4204 to 4470 feet and from 5444 feet to bottom are almost all well saturated oil sand. The

For Successful Fishing *use the* **NEW IMPROVED GRAY SLIP SOCKET**



with . . . **RELEASING SLIPS . . . PACK-OFF . . .** and **MILL** for smoothing off fish. In all sizes for rental or sale.

•

Run the right tool first as insurance against possible loss of your hole.

PHONE WAYSIDE 2111
OR TAYLOR 7674

•

GRAY
TOOL COMPANY
HOUSTON, TEXAS

zone between 4470 and 5444 feet is mostly shale. Two cement plugs were landed in the shale zone. The plugs will be drilled out and the zones given further tests, one at a time. After these tests, the casing program will be decided upon.

In the same field, Pacific Western Oil Company's Rubel 17 has reached 4745 feet and the past few hundred feet have shown shale and oil sand, indicating it also has a splendid chance of making a deep producer. It is thought both wells are drilling in much the same formation although a well defined fault divides the two tracts.

Baldwin Oil Company's Brownmoor 9 has plugged from 6170 feet to 6050 feet, located a leak in the tubing, and when repairs are made, will be further tested on the pump.

Four other wells are drilling in the field.

Fishing Job Continues On World's Deepest Test

Los Angeles.—General Petroleum Corporation's Berry 1 at Belridge, deepest well in the world at 11,377 feet, is still fishing for stuck tubing. Tubing has been recovered down to 9628 feet and it appears to be collapsed at that point, making the work unusually difficult.

Union Oil Company's Belridge 18 in the same field stopped the drill at 7838 feet in oil sand to cement 8⅝-inch casing at 7797 feet, and at last reports was coring ahead at 7992 feet in oil sand and shale.

Six Kettleman Hills Wells Below 8000 Feet

Los Angeles.—Superior Oil Company's Huffman 8, Section 29-21-17, Kettleman North Dome, has reached a depth slightly better than 9200 feet. Very little information is being made public. Sixteen-inch casing was cemented at 590 feet in this hole and 8⅝-inch pipe was set at 7428 feet. It is understood the present hole is seven inch and that the bit is in hard sandy shale.

Kettleman North Dome Association's No. 56-8Q reached 9841 feet when a fishing job developed. Hole has been cleaned out to 8075 feet and the fish will be sidetracked. This is a deep test on the edge of the field, and the last casing cemented was 13⅜-inch at 6847 feet.

On the Middle Dome, Middle Dome Corporation's No. 58-19V, Section 19-23-19, the lone driller in that area, is in brown shale at 7127 feet with 10¾-inch casing cemented at 5625 feet.

A number of wells at Kettleman are drilling below 7000 feet, and six are below 8000 feet. It is probable that several completions will be listed during August.

Famous Old California Well Being Recompleted

Los Angeles.—Thos D. Campbell of Los Angeles has taken over the 60-acre lease at Maricopa upon which is located the old Lake View Gusher, the most celebrated well in California oil history, and will attempt to place it back on production. The well was recently redrilled to 2626 feet by Merritt Annex Oil Company, fee owner of the land and 6⅝-inch casing was cemented at 2157 feet. A string of 4¾-inch tubing was stuck in the hole. The tubing is now being pulled preparatory to further work. The well has been off production for some years, and the lease held by Union Oil Company had expired.

Five New California Wells Small Initially

Los Angeles.—Five producers and one dry wildcat makes up the week's completion list in California. The five producers had a total flush production of 2160 barrels, and represented a total drilled footage of 22,016 feet.

One re-completion at Long Beach was good for 100 barrels at 5050 feet, plugged back from 6553 feet. At Santa Fe Springs, Shell Oil Company plugged G.H.N. 30 from 8090 feet to 4454 feet for 260 barrels.

The list of new completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
KERN COUNTY—		
Ohio Oil Co., Van Houten 1	*	2632
ELWOOD—		
Elwood Explor. Co., S L 90-8	400	3442
INGLEWOOD—		
Shell, Rindge 16	790	3244
EAST COYOTE—		
Bardeen Pet. Co., A.U.W. Co. 1....	120	5201
LONG BEACH—		
Dabney-Johnson Oil Co., No. 91....	100	5130
Southern Empire Oil Co., No. 1..	750	5000

*Failures; †Junked; ¶Million cu. ft. gas.

Ventura County Shallow Prospect Acreage Leased

Los Angeles.—George Goodrum and C. J. Gibson have just completed the leasing of 2000 acres of oil land in Ventura County, about nine miles north of the Ventura Avenue field and about three miles west of Ojai. The land lies west of Ventura River and south along Baldwin Road, extending to Santa Ana Creek, and is described as Rancho Santa Ana.

The entire structure has been leased by these men, and from geological reports, high gravity oil is expected to be found between 1500 and 2500 feet. This property is very desirably located as there are no roads to build and water for drilling is available.

Mr. Goodrum states that a corporation is being formed and that they are now negotiating for drilling equipment, as they expect to actually start drilling operations within 30 days.

Many New Fields Will Be Found in Michigan

Mt. Pleasant, Mich.—Dr. Virgil R. D. Kirkham of Saginaw, prominent Michigan geologist and former professor in the University of Chicago, expressed the belief that "probably 50 more oil and gas pools will be discovered in Michigan" and that the "state has a 50-year career ahead as an oil and gas producing area, when addressing oil and gas producers at an Oil and Gas Association banquet July 21.

The geologist added, however, that "discovery of the new pools will not come without some operators suffering both heartaches and headaches." He prophecied that the discovery of another pool like Porter that many major companies would enter Michigan.

Michigan Natural Gas Hearing Set for August 7

Mt. Pleasant, Mich.—A public hearing on proposed new rules of regulation and control of natural gas in Michigan has been called for August 7 at Mt. Pleasant, James B. Balch, chairman of the Michigan Public Utilities Commission, announced this week. Governor William A. Comstock, who in March ordered the Utilities Commission to make a survey of natural gas resources and reserves, will be one of the chief speakers at the meeting.

At the hearing all gas lease owners and operators will be given an opportunity to express their views on proposed rules for regulation in the natural gas industry of the state. A draft of rules has been prepared by a committee working as a sub-unit of the Utilities Commission.

Meanwhile, U. S. Bureau of Mines engineers are nearing completion of their survey of Michigan gas fields, information that will be turned over to the Utilities Commission and serve as the guide as to whether or not present developed gas supplies and reserves merit additional pipe lines and greater markets. The survey also is expected to reveal for the first time the true potentialities of wells, their ability to stand up under a pull and the reserves as now proven.

Estimates of natural gas reserves in Michigan have ranged all the way from 22 billion to 75 billion. Little is known as to what effect a steady pull has had on wells.

Large Gasser Completed in Mecosta-Montcalm Area

Mt. Pleasant, Mich.—Potentialities of the Mecosta-Montcalm district as a gas bearing area of importance were increased greatly this week when Old Dutch Oil and Gas Company's Fargar 1, a wildcat test in Section 11, Belvadire township, Montcalm County, more than six miles from previously developed gas production, gauged 5,500,000 cubic feet from the Michigan Stray sand horizon at 1251-1259 feet. The test is approximately six miles due west of a 3,500,000-foot gas well from the same horizon and about eight miles southeast of a 7,500,000-foot well in Hinton township, Mecosta County. An older test in Richland township of Montcalm County showed about 300,000 cubic feet.

In Ferris township, Section 16, Atha Oil Company's Davenport 1 showed an estimated 200,000 cubic feet from the Michigan Stray.

Other developments in the present heavily played Montcalm-Mecosta area, included Dundee lime failures on two outside tests. Daily Crude Oil Company's Blair 1, Montcalm County, Ferris township, Section 11, encountered water at 3380 feet while Theodore Oil Company's Sherwin 1, Home township, Section 13, encountered water at 3450 feet. Geologists expressed the belief that neither of the tests picked up a true Dundee lime but believed that the formation was Monroe lime.

Possible extension of the old Vernon pool in Isabella County was indicated when W. J. Bernier's Duncan 1, Section 9, showed 75 feet of oil at 3875 feet. The test is located a mile north of the present defined producing area.

Porter Township Lease Has Fire

Mt. Pleasant, Mich.—Fire of undetermined origin caused damages estimated at more than $6000 on Pure Oil Company's Walter Neitzke lease in Porter township, July 23. One of a battery of seven 500-barrel tanks, six filled with crude, exploded and the fire quickly reached the other tanks.

Ogemaw Test Plugged Back to Make Producer

Mt. Pleasant, Mich.—Eleven completions in Michigan for the week included McClanahan Oil Company's Guilford 1, Ogemaw County, West Branch township, Section 29, a deep test originally drilled to 3755 feet, and plugged back to 2724-50 feet which is now estimated good for 20 to 40 barrels from that depth. Production is from the Dundee horizon. The test failed to show commercial production in Monroe, the formation tested at the 3755 foot depth.

Completions follow:

Company, Well and Location	Init. Prod. Bbls.	Depth
MIDLAND COUNTY—		
McClanahan Oil Co., Breu 3, Porter twp, nw se ne, Sec 20	1350	3411
Pure Oil Co., Alexander 2, Porter twp, ne se se, Sec 18	1045	3412
Naramore 8, Porter twp, se nw se, Sec 16	225	3433
Novak A 3, Greendale twp, se se se, Sec 7	125	3575
Gordon Oil Co., Greene 2, Jasper twp, se ne ne, Sec 13	40	3438
ISABELLA COUNTY—		
Mammoth Pet Co., Schug 1, Vernon twp, se se sw, Sec 22	60	3762
W. J. Sovereign, Ann Arbor 2, Vernon twp, ne ne nw, Sec 27	†	450
OGEMAW COUNTY—		
McClanahan Oil Co., Guliford 1, West Branch twp, ne ne nw, Sec 29	30	2750
MONTCALM COUNTY—		
Daily Crude Oil Co., Blair 1, Farris twp, sw se se, Sec 11	*	3380
SAGINAW COUNTY—		
White Star Oil Co., State Bank 1, sw ne sw, Birsh Run twp, Sec 26	*	2579
Brant Marion Prosp, Ward 1, Marion twp, nw ne, Sec 12	*	3075

*Failures; †Junked; ¶Million cu. ft. gas.

Three More Refineries to Be Built in Michigan

Mt. Pleasant, Mich.—Three new Michigan refineries were reported projected in Michigan this week. Max Bray of Texas announced that he would start a refinery in the new Montcalm County Traverse lime producing area. The plant is to be brought in from Texas.

Old Dutch Refining Company, which now operates a refinery in Muskegon, Michigan, contemplates building a refinery at Edmore, Michigan, while Henry Goodman and I. E. Goodman, former officials of Keystone Refining Company of Detroit, have acquired a 43-acre tract near Detroit for the erection of a refinery.

Safety Drive

Mt. Pleasant, Mich.—The Oil and Gas Association of Michigan will launch a safety drive in the Michigan oil and gas fields, it was announced this week.

Eastern Fields Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
PENNSYLVANIA		
BRADFORD FIELD—		
Ryder Scott & Co., Lippert 3	2	....
Lippert 4	3	....
Rice & Co, Weston 1	2	....
N. V. V. Franchot, Rounds 61	5	....
Hungiville & Walker, Park 105	5	....
Corwin & Gallagher, Corwin 7	5	....
D. Y. M. Corporation, Middaugh 1	2	....
Middaugh 2	3	....
A. L. & M. L. Lilly, Middaugh 13	5	....
M. Hungiville Daly 1	2	....
McCullough 1	2	....
WASHINGTON COUNTY—		
Union Oil & Gas Co, Lindley 2	25	....
GREENE COUNTY—		
J. L. Garard & Co, Greggs 28	1	....
ALLEGHENY COUNTY—		
E. L. Oles, Degelman 2	¶	....
McCreedy, O. Miller 2	*	....
WEST VIRGINIA		
KANAWHA COUNTY—		
G. L. Cabot, Inc, Campbell Coal 6	*	....
PLEASANTS COUNTY—		
M. C. Martin, Campbell 1	¶	....
Adam Ward & Co, Varner 19	25	....
RITCHIE COUNTY—		
John Leeton & Co., Gray Heirs 1	¶	....
Hinton Farm Oil Co, Hinton 2	45	....
W. Bickerstaff, McMullen Hrs 1	¶	....
Ira Roberts & Co., Baker 1	¶	....
W. H. Bickle, Fluharty Hrs. 2	¶	....
Richard Farm Oil Co., F. Ball 2	¶	....
South Penn Oil Co, Haught 14	18	....
LIMA FIELD		
WYANDOT COUNTY—		
Ella Walton, Leister & Co. 1	¶	1375
SOUTHEASTERN OHIO		
MONROE COUNTY—		
Ray Lynn & Co, P. W. Eddington 2	10	1656
Robt. Lewis & Co., W. Flauhans 1	¶	1514
R. C. Cunningham, G. & A. Reed 2	*	1497
Jesse Reed 1	*	1280
NOBLE COUNTY—		
Thermon & Chancy Rich, McLaughlin 3	2	1578
Elmer Thornley & Co, Leonard Cain 2	2	1578
WASHINGTON COUNTY—		
J. T. Hall & Co, G. & J. Hall & Co. 2	*	1265
Sears & Saxon, John W. Haas 18	18	686

Company, Well and Location	Init. Prod. Bbls.	Depth
CENTRAL OHIO		
BELMONT COUNTY—		
Wm. Patton & Co., E. J. Peffer 15	¶	1730
COSHOCTON COUNTY—		
Murphy Bros, Ward Little 4	55	3081
GUERNSEY COUNTY—		
C. E. Wharton, R. & E. Frams 3	5	1374
HOLMES COUNTY—		
Wittmer Oil & Gas, D. Campbell 2	*	920
KNOX COUNTY—		
Riley & Co, Joe Breece 2	*	675
LORAIN COUNTY—		
John Tomers, Ohio Fuel Gas Co 1-5794	6	....
LAWRENCE COUNTY—		
J. B. Hanson, Ohio Fuel Gas Co. 1	¶	2881
MEDINA COUNTY—		
Lena E. Myers, Ohio Fuel Gas Co. 1-5805	¶	3183
HARRISON COUNTY—		
S. B. Reeves, Pittsburg Co. 1	*	1168
INDIANA		
GIBSON COUNTY—		
A. F. Dugan, M. G. Powell & Co. 1	*	....
HANCOCK COUNTY—		
J. Harve Snyder, L. F. Bowman 1	¶	975
KNOX COUNTY—		
Murphy Oil Co. of Pa. Hamilton Like 5	*	....
MONROE COUNTY—		
Petroleum Exploration & The Ohio Oil Co, C. A. Kenrich 1	40	885
PIKE COUNTY—		
Claude Noble, Edward Adams 2	¶	....
VANDEBURG COUNTY—		
A. H. Wade, Louis Hermein 1	*	1015
Star Drilling Co, Joe Snyder 1	*	1145
Wm. Roth, Drake & Young 1	5	....
William Riggs, Vanerburg Oil Corp. 1	*	....
KENTUCKY		
HANCOCK COUNTY—		
Joseph P. Mayer, Matthews 3	100	....
OHIO COUNTY—		
Snowden-McSweeney Co, Peckenpaugh 1	150	....
Sidney Lancaster, Cumberland Pet Co. 1	50	....

*Failures; †Junked; ¶Million cu. ft. gas.

Drilling Reports on Important Wildcats

EAST TEXAS

ANDERSON COUNTY—H. L. Hunt Prod. Co. et al's A. L. Temple-C. A. Miller 1, S. Sanchez sur No. 2-10, Long Lake area, dr 350 ft. Canadian Production Co.'s Mrs. R. M. Jackson-Amerada 1 (387-ac), Manuel Rionda sur, dr 1910 ft. Sun Oil Co.'s Robt. N. Erskine 1 (5203-ac), Sam C. Box sur, Navarro Crossing, elev 202 ft, top Pecan chalk 4142 ft, dr chalk 4270 ft. J. A. Johnson et al's Mrs M. B. Huffman 1 (170-ac), R. S. Patton sur, rig.

CASS COUNTY—John R. Hadley et al's Ray Bryan 1 (80-ac), Al. Latimer sur, elev 343 ft, Pecan chalk 2316-2638 ft, sd 2965 ft. Remley-Nelley & R. Kamon Group No. 1's Mrs. I. O. Savage 1 (121-ac), Mary Patterson sur, elev 351 ft, Pecan chalk 2030-2488 ft, sd 4016 ft. United Production Corp.'s T. J. Walton 1, J. Coleman sur, Pecan chalk 2079-2421 ft, top Anhydrite 4921 ft, dr 5470 ft. H. F. Wilcox et al's S. A. Orr 1 (316-ac), G. W. Morris sur, elev 381 ft, sd 3887 ft.

CHEROKEE COUNTY—Milhoan Drl. Co.'s O. R. Perkins 1 (164-ac), J. M. Martinez sur, rig. Walter L. Goldston et al's Southern Pine Lumber Co. 1 (80-ac), N. Newton sur, rig. H. L. Hunt Prod. Co's T. R. Black 1 (50-ac), D. W. McNabb sur, Rusk Pool, lcn. Smith & McRae's John M. Tipps 1, S. W. Heath sur, rig. K. Hughes-Ed. Zilkey & McCullough's Jess Bradford 1 (50-ac), J. Armendaris sur, dr chalk 3850 ft. T. J. Wood et al's New Birmingham Dev. Co. 2 (161-ac), Levi Jordan sur, top Pecan chalk 3998 ft, dr 4040 ft; New Birmingham 3, lcn. Jacksonville O&G Co's H. D. Henderson 1 (40-ac), J. Pineda sur, dk. Arch Rowan-Roy Nichols & Simms Oil Co's C. V. Gilbreath 1 (60-ac), H. M. Brewer sur, Reklaw area, lcn. South Gulf Oil Corp's Joe Bailey-Hagelstine 1 (80-ac), L. Rhodes sur A-724, elev 386 ft, top Pecan chalk 3100 ft, dr 3150 ft.

FRANKLIN COUNTY — Humble O&R Co.-Ed. B. Hopkins-Ed. DeGolyer et al's S. David-M. & P. Bank 1 (200-ac), John Askey sur, elev 365 ft, Pecan chalk 1225-1325 ft, dr 2840 ft.

FREESTONE COUNTY—Clyde W. Creighton et al's W. A. Holley 1 (80-ac), A. B. & M. sur, elev 399 ft, dr 5725 ft. Walter M. Buress et al's J. B. H. Orand 1 (50-ac), W. M. C. Jones sur, 1¼ mi n Fairfield, lcn. American-Liberty Oil Co. et al's Trinity Farm Securities Co. 1 (80-ac), elev 255 ft, Pecan chalk 2200-2400 ft, dr 3240 ft. Walter L. Goldston et al's E. M. & C. H. Watson 1, R. D. Price sur, lcn. Hunter-Rowe & Trinity Farm Securities Co's Trinity Farm 1 (80-ac), R. M. Williamson sur, sw of Cayuga, elev 253 ft, Pecan chalk 2195-2331 ft, dr 3265 ft. J. E. Milburn & J. B. Patty's S. E. McAshan 1 (40-ac), S. G. Diaz sur, Blk 178, sp & sd. Trinity State Oil Co's Trinity River 1, sw of Cayuga, lcn.

HENDERSON COUNTY — Great State Oil Corp. (Dick Andrade's III) R. Sid Ansley 1, N. B. Thompson sur, dr 350 ft. Crosby & Pulp's M. T. Dodd 1, Geo. Aldrich sur, 4 mi e of Malakoff, sp & sd.

HOPKINS COUNTY—D. A. Hale et al's L. M. Hall 1 (70-ac), A. Caro sur, A-143, elev 506 ft, dr 320 ft.

HOUSTON COUNTY—Boone et al's Trinity State Bank 1 (142-ac), Chas. McEllis sur, dr 470 ft.

HUNT COUNTY—G. S. & S. Oil Co's Oscar Popper 1, Jas. Moore sur 544, top Gober chalk 900 ft, sd 1425 ft. L. G. Priest & Co's Barnett 1 (212-ac), J. C. Hamer sur A-417, rig. H. O. Shawver et al's J. H. Jones 1 (99-ac), Lydia Ferguson sur, jkd & abn 3104 ft.

LEON COUNTY—Killough & Tucker's G. B. Young 1 (100-ac), Jas. M. Boone sur, sp & sd.

LIMESTONE COUNTY — Peyton Bros. et al's Jake Steubenrauch 1, Trinity sand test on w side Mexia field, rig. J. E. Schultz et al's R. Ward 1 (23-ac), H. York sur, lcn.

MORRIS COUNTY—H. N. H. Drl. Co's E. Hall 1 (177-ac), Levi Jordan sur, top Pecan chalk 2360 ft, sd 3690 ft. C. L. Simpson et al's P. M. Staggers 1, J. D, Nelson sur, Pecan chalk 2520-2955 ft, sd 3550 ft.

NAVARRO COUNTY—Bennett Bros. et al's T. E. Stewart 1 (83-ac), W. R. Bowen sur, dr 835 ft. L. N. McCulloch et al's C. D. & J. L. Berry 1 (35-ac), W. W. Moss sur, sd 625 ft. R. L. Wheelock-J. L. Collins-Magnolia & Humble's I. N. Cerf 1 (147-ac), Jas. Smith sur, Trinity sand test on w edge Corsicana-Powell field, elev 435 ft, Austin chalk 2860-3372 ft; top Woodbine sand 3827 ft; top Georgetown lime 4307 ft, dr 4900 ft.

RAINS COUNTY—J. K. Wadley & J. W. Halsell's T. F. Jones 1 (22-ac), B.B.B.&C. sur, elev 425 ft, Pecan chalk 2503-2700 ft, top Austin chalk 3970 ft, dr 4745 ft.

RED RIVER COUNTY—Speary & Cornell's E. H. Thompson 1 (38-ac), J. Northcross sur, dr 650 ft.

RUSK COUNTY—Geo. F. Hudson et al's J. H. Phillips 1-A, N. Villareal sur, top Pecan chalk 2412 ft, testing Woodbine sand 3627 ft. G. A. Hathaway et al's Gray 1, Jas. McLain sur, elev 315 ft, top Georgetown lime 3140 ft, sd 4460 ft. Stewart & Egan's Hall Wood 1 (847-ac), Blk 12, Jose I. Sanchez sur, lcn.

SMITH COUNTY — Cochran & William's Mrs. J. M. Dean 1 (100-ac), B. Moore sur, lcn. B. F. Phillips et al's Gibbons Mfg. Co. 1, J. M. Garcia sur, elev 304 ft, sd 3830 ft. D. E. Stimson & Preston Rose's E. Wiggins 1 (48-ac), F. H. K. Day sur, elev 479 ft, Pecan chalk 3040-3420 ft, dry & abn 4528 ft.

UPSHUR COUNTY—G. H. O. Oil Co's J. M. Floyd 1 (177-ac), Robt. Raiford sur, sd 2950 ft. Lanier & Moore's Mrs. M. Vaughn 2, P. B. Standifer sur, sd 1042 ft.

VAN ZANDT COUNTY—B. F. Blackman et al's C. E. Dorrill 1 (35-ac), C. E. Rivers sur, sd 1340 ft. E. B. Evans et al's Mrs. J. P. Palmer 1 (140-ac), N.C.S.L. sur, lcn. H. L. Edwards et al's A. T. Bass 1 (16-ac), Wm. Hart sur, elev 480 ft, top Woodbine section 4210 ft, fsh drill pipe 4267 ft. Martin & Evans' L. M. Palmer 1 (69-ac), Blk 13, N. C. S. L. sur, fsh cas 1288 ft. S. E. Miller et al's J. M. Palmer 1 (39.1-ac), N. C. S. L. sur, Blk 14, dr 235 ft. Peden-Olson Oil Co's W. S. Brannon 3 (45-ac), testing 1227 ft; Palmer 1, sd 1270 ft. Skinner et al's D. F. Cade 1 (28-ac), N. C. S. L. sur, co 1265 ft. Van Zandt Synd's Dr. C. S. Coker 1 (60-ac), Wm. Daniel sur, sd 1208 ft. Warren & Minnihan's Edgewood Nat'l Bank 1 (31-ac), M. B. Lout sur, dk. John D. Wrather et al's G. W. Carter 2 (160-ac), Wm. Daniel sur, testing Woodbine sand 3060 ft.

WOOD COUNTY—Alex M. Snyder et al's J. T. Holmes 1 (122-ac), A. N. McKnight sur A 399, top Pecan chalk 3400 ft, sd 3615 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completion and wildcat reports in THE OIL WEEKLY.

* —*dry hole, abandoned well.*
‡ —*salt water (completions).*
† —*junked and abandoned.*
¶ —*million feet of gas.*
abd —*abandoned.*
bbls —*barrels.*
br —*building rig.*
b.s. —*basic sediment.*
csg —*casing.*
co —*cleaning out.*
dd —*drilling deeper.*
dk —*derrick.*
dr —*drilling.*
fsg —*fishing.*
ft —*feet.*
hfw —*hole full of water.*
in —*inches.*
lcn —*location.*
m —*milling.*
mim —*moving in materials.*
mit —*moving in tools.*
mot —*milling on tools.*
n, s, e, w, —*north, south, east, west.*
oih —*oil in hole.*
owdd —*old well drilling deeper.*
owpb —*old well plugging back.*
pb —*plugged back or plugging back.*
r —*reaming.*
rog —*rig on the ground.*
rur —*rigging up rotary tools.*
rust —*rigging up standard tools.*
sd —*shut down.*
sdtr —*sidetracking.*
sg —*show gas.*
si —*shut in*
so —*show oil.*
so & g —*show oil and gas.*
spd —*spudding.*
sr —*straight reaming.*
sw —*salt water.*
td —*total depth.*
ur —*underreaming.*
wih —*water in the hole.*
wo —*workover.*
wocs —*waiting on cement to set.*
wosr —*waiting on standard rig.*

SOUTH TEXAS

BANDERA COUNTY—A. P. Crane & Co.'s Watson 1, sd 1471 ft, blk shale. Peerless Oil & Gas Co.'s R. G. Garrison 1, GC&SF Sur. No. 506, dr 700 ft.

BASTROP COUNTY—Champion Oil Co.'s Charles E. Anderson 1, 1800 ft sel and 1200 ft nel 578-acre tract, Jose Antonio Navarro sur, dr 310 ft. Joe Mills et al's Lytton 1, 1044 ft nel and 1005 ft sel, 320-ac lease, J. A. Navarro sur, top serpentine 1507 ft, elev 458 ft, soft serpentine showing oil 1628-30 ft, 6⅝-in cas 1490 ft, td 1630 ft, dr out plugs. Ogden & Reed's C. L. Riddle 6, Gray sur, elev 434 ft, lime 2286-96 ft, 5-3/16-in cas 2154 ft, put on pump.

BEE COUNTY—Falvey et al's Gardner 1, F. Lewis sur, testing Pettus snd abt 3050 ft. R. H. Feltner's Albert Theis 1, C. Revis sur, sd 3534 ft for fuel. Houston Oil Co.'s Niehaus 3-B, BS&F Sur. No. 1, Pettus snd 3645-60 ft, dst 80 ft oil and 20 ft mud. Howeth & Swiger's Marie Schramm Estate 1, H. O'Brien sur, dr 4890 ft. Phillips Petroleum Co.'s T. P. Morgan 1, H. E. Eyles sur, td 6519 ft, sd. Walton & Heard's Rapp 1, Blk 5, W. Hall sub, Uranga Grant, prep to sp. R. J. Worthington et al's Rutledge 1, B. Q. Hadley sur, set 300 ft cas, dr out plugs, sd.

BEXAR COUNTY — McPhee & Briggs' Florence Lamb 1, M. de Luna Sur. No. 4, sd for repairs 800 ft; Carter 1, same sur, prep to sp. James G. Boles' Dillon 1, same sur, ds stuck 1082 ft. F. T. Chew's C. S. Ogden & Brooks 1, Mission Irrigated Farms sur, td 250 ft, move off spudder, wait on rotary. F. & H. Oil Co.'s G. W. Hendrickson 1, County Blk 4191, sd 1050 ft. W. H. Kennon's Fee 5, M. F. Rodriguez Sur. No. 4, td 380 ft, cavings may cause hole to be lost. F. W. Noble's R. W. DeVilbiss 1, Martinez Sur. No. 36, dr 480 ft. Texas Petroleum Co.'s E. B. Carruth 1, F. Rolen Sur. No. 48, dr 1125 ft; E. B. Carruth 2, sw Von Ormy Oil Co.'s Carruth 1, F. Rolen Sur. No. 48, dr 300 ft. E. Wielbacher's A. Ernst 2, J. Christopher sur, sd 983 ft.

BROOKS COUNTY—Mrs. Florence East's Genaro Madrigal 1, Share B, Rafael Garcia Salinas Grant, dr below 600 ft.

CALDWELL COUNTY—S. S. Cargill's W. Damerau 2, D. Cooper sur, elev 427 ft, top Edwards lime 2275 ft, td 2277 ft, 6⅝-in csg 2210 ft, corrected depths, clean cavings, to core deeper. Francis P. Hynes' J. M. Trammell 1, 750 ft sel and 330 ft nel 117.8-acre tract, Esther Berry sur, lcn. Kurz Oil Co.'s Kurz Ranch 1, Blk 1, Klecamp sur, dr 600 ft. Monte Vista Oil Corp.'s W. I. Pope 1, McCarley sur, dr 750 ft. M. C. Moore's Lackey 1, Squire Damon sur, re-dr 1515 ft. Newton Oil Co.'s A. O. Mebane 1, 150 ft ne of s cor and 150 ft se road in 490-acre tr, Francis Berry sur No. 12, td 1973 ft, top Edwards lime 1959 ft, old core hole dr by L. H. Wentz, clean out to dr deeper.

CALHOUN COUNTY — Continental Oil Co.'s Moore 1 (American National Realty Co.), center ne Sec. 6, Blk C, r 5870 ft. Dyck Oil Co. & Mills Bennett Oil Corp.'s E. R. Adam 1, formerly carried as J. H. Meek's Adam 1, center nwl Sec. 45, in 64-ac tr, Valentine Garcia sur, sp.

DUVAL COUNTY—Continental Oil Co.'s R. Driscoll Estate 2-A, Sec. 448, dr 3670 ft. Tom Graham and Texon Royalty Co.'s G. B. Parr 1, J. Poitevent Sur. No. 185, snd 3583-3624 ft, td 3624 ft, 7 in set 3584 ft, dr out plugs. Frank Gravis' Hubbard 1, Sec. 83, elev 659 ft, td 1760 ft, wait on core bbl. Grimes et al's M. Serna 1, Sec. 286, ru. Harrison Oil Co.'s Serna 2, Sec. 523, dk. Jeffers Oil Co.'s Cadena 1, 9400 ft el and 8300 ft from most southerly nl of Jose Marcello Hinojosa grant, lcn. Lewis and Beer's W. R. Peters 1, Blk 18, Sec. 27, sd 1650 ft. Magnolia Petroleum Co.'s Duval Ranch 1, Sec. 58, dr 4355 ft. W. C. McBride, Inc.'s, E. R. Hagist 1, s se Sec. 1, top Cole snd 1444 ft, dry, sd 1532 ft. O'Byrne

& Jennings' Benavides 1, Sec. 355, dr 1635 ft. Sun Oil Co.'s Moreno 1, Sec. 540, dr 6014 ft.

EDWARDS COUNTY — Wil Ohlhausen's Turney 1-A, CCSD&RGNG Ry. sur, Blk NW, skid to new lcn. H. H. Sides' Turney 1, CCSD &RGNG Ry sur, Blk NW, Sec. 164, dr 930 ft, sh.

FRIO COUNTY — Amerada Petroleum Corp.'s Halff & Oppenheimer 2, Gibson Sur No. 16, dr 6270 ft.

GILLESPIE COUNTY — Ed L. Nixon's Lindig 3, J. Guerra Sur No. 41, dr 355 ft.

GOLIAD COUNTY—Duval Oil Corp. and Fred K. Foster's L. Borden 1, A. Gutierrez sur, lcn. Diamond-Half Oil Co.'s Runge Natl. Bank 1, G. B. Meyers sur, sd 3745 ft. Kemp Oil Co.'s (C. F. Nichols) Lackey & Weldon 1, J. Gomez sur, move in rig. P. H. Wilson's Lackey & Weldon 1, J. Gomez sur, lcn.

GONZALES COUNTY — H. H. Weinert's A. Kallies 1, I. Nash sur, lcn.

GUADALUPE COUNTY — Diamond Half Oil Co.'s A. J. Ball 1, L. H. Peters sur, dr 1860 ft, hard Taylor marl. Texio Oil Co. and J. Elmer Thomas' Maurerman 1, J. de la Baume sur, sp and sd to dr water well.

HIDALGO COUNTY—Davis and Harrison's Mrs. L. George 1, Tract 13, Por. 41, dr 3625 ft. Union Sulphur Co.'s American Rio Grande Land and Irrigation Co. 2, 400 ft sl and 400 ft el tract 2082, Blk. 86, North Capisallo district, moving in.

JACKSON COUNTY — Phillips Petroleum Co.'s Drummond 1, Musquiz sur, dr 5475 ft; State Realty & Investment Co. 1, Vanderbilt townsite, ru; Simon & Seidel 1, Musquiz sur, coring sand 5600 ft, show sw; Simon & Seidel 2 and 3, and Simon 1, all in Musquiz sur, lcn. Several locations made on Vanderbilt town lots, but permits denied; injunction granted in one case, however, and all wells may be drilled. Turman Oil Co. et al's T. H. Miller 1, Musquiz sur, wait on rig.

JIM HOGG COUNTY—Atkins & O'Neil's W. W. Jones 1, Diego Hinojosa Grant, dr 3675 ft. French Oil Corp.'s Tom East 1, Blk 67-68, B. J. Leyendecker sub, No. 2, Los Moritas Grant, dr 2735 ft. Sun Oil Co.'s Guerra 2-E, Las Cuevitas sur, Share 14-A, dr 2010 ft; A. Mertinez Estate 1, Tract 25, Animas Grant, prep to sp.

KARNES COUNTY—Harrison and Abercrombie's Schaeffer 1, A. W. Belvin sur, sd 1135 ft for boiler repairs. R. E. Chezeaux's T. Campbell 1, J. R. Bracker sur, sp and sd.

KENDALL COUNTY — Walter Bradley's Willie Werner 2, J. F. Torey sur, dr 695 ft.

KERR COUNTY — Edmiston & Walker's Whitworth 1, Sec. 1439, dr 675 ft, last rept. J. F. Morrisey Co., Inc.'s, F. A. Karner 1, 1400 ft sl and 600 ft el, BS&F Sur. No. 1, Ab. 77, formerly carried as Lonnie Evans et al, dr 145 ft lime. G. F. Schreiner's Jeff Love 3, Sec. 1594, hole caving 1500 ft.

KLEBERG COUNTY—J. S. Brown et al's Anton Dietz 1, Tract 7, Sec. 56, dr 3079 ft.

LA SALLE COUNTY—Dupree Fountain's R. J. Kroschewsky 1, Starty sur, dk.

LEE COUNTY—James E. Pederson's C. A. Turner 1, David Hudson sur, dr 5300 ft.

LIVE OAK COUNTY—Marine Oil Co.'s Ross. Boothe 1, 400 ft sl and 400 ft el 277-acre tract, Kivlin sur, ru. Houston Oil Co.'s Cartwright 26, making lcn. Lion Oil Refining Co.'s McNiell 1, James Curry sur, dr 3075 ft. Unit Oil Co.'s A. Terrell 1, Christopher Scanlon sur, coring 1130 ft, top Mirando sand 935 ft, top Pettus 1010 ft.

McMULLEN COUNTY—Choate & Noble's Miles 1, 330 ft sl and 2750 ft el 1250-acre tract Charles Stephanes Sur. No. 76, lcn. C. C. Shumway, Inc.'s, Shiner Ranch 7, Sec. 62, sp.

NUECES COUNTY — Midland Oil Co.'s Noakes 1, Farias sur, dr 5815 ft. Nutex Oil Co.'s King 1, Sec. 24, td 6021 ft, pb 5455 ft, wocs. Stanolind Oil & Gas Co.'s Stratton 2, Sec. 13, r 5024 ft. Texas Seaboard Oil Co.'s Jurica 1, Robertson sur No. 32, set 800 ft sur csg, re-dr.

REAL COUNTY—M. J. Heartwell's Mrs. M. S. Perry 1, Sec. 175, AB&M Sur, Sec. 175, fsh 2900 ft.

REFUGIO COUNTY — Holland Oil Co.'s Peck 1, E. Lopez Sur. No. 44, td 5351 ft, td tr 4500 ft, new td 5348 ft, prep to set csg. Humble Oil & Ref. Co.'s Fannie Heard 4, M. J. Ximines sur, td 5943 ft, set csg 5936 ft, wocs. G. Jeffrey's J. F. Power 1, Garza & Vidauri sur, prep to re-dr 4523 ft. Nesral Oil Co. & Baymore's V. E. Heard 1, M. Ximines sur, sd 6100 ft. Quintana Petroleum Co.'s T. O'Conner 2-A, Blk 4, Swisher sur, dk. United Production Co.'s W. J. Fox et al 15, Hews and Brown sur, td 5831 ft, dr out plugs.

SAN PATRICIO COUNTY — Atkins & O'Neil and Continental Oil Co.'s E. Welder 1-A, Villareal sur, blk 2, elev 17 ft, td 5453 ft, csg set 5440 ft, snd 5441-53 ft, dr out plugs; E. Welder 2, Villareal sur, elev 19 ft, td 5383 ft, sndy shale 5368-83 ft, dr out plugs. Beasley & Maxwell's Saddler 1, blk 1, Sec. 32, re-dr 5056 ft. Diamond Half Oil Co.'s Ragsdale 1, George Paul Sur. No. 58, td 5518 ft, ds twist off. Heep Oil Corp.'s R. H. Welder 3, formerly carried as No. 1, Loupy sur, dr 3750 ft. Marland Oil Co. of Texas' Mrs. Annie Miculastic 1, B. Dale sur, Sec. 6, set 800 ft sur csg, wocs. Petrol Corp.'s Welder 1, de la Garza sur, dr 4990 ft. Plymouth Oil Co.'s Welder 2-A, J. & F. Portillo sur, td 5548 ft, pb 5300 ft, dr 5360 ft, sdtr hole.

STARR COUNTY—C. R. Borah et al's A. Guerra 1, San Jose Grant, sd 504 ft. R. S. Bolling's M. M. Garcia 1, Sec. 918, dr 2250 ft. Circle W. Oil Co.'s Block Bros. 1, blk 13, dr 2575 ft. Smith-Tex Oil Co.'s Starr County Cattle Co. 1, blk 24, Por. 89, dr 3547 ft. E. L. Younkins' Kelsey Bass 1, blk 19, Por. 87, dr 1245 ft.

UVALDE COUNTY—Humble Oil and Refining Co.'s R. L. Anderson 1, J. J. Guerra sur, td 2663 ft, pb 2513 ft, whipstock. T. T. Word's K. S. Truelove 1-A, Elam sur, dr 874 ft, Glenrose; Quinn Braden 1, 350 ft wl and 2000 ft sl BS&F Sur. No. 185, dr 250 ft.

VICTORIA COUNTY — Gulf Production Co.'s Kerran 5, M. de Leon sur, dr 4720 ft. Humble Oil & Refining Co.'s M. V. O'Connor 15, dk; Mitchell 2, P. Benavides sur, dr 3550 ft; A. M. McFaddin 1, C. O. Edwards sur, dr 4515 ft, shale. Texas Co.'s A. M. McFaddin 2, M. B. Hoyt sur, dr 4076 ft.

WEBB COUNTY — Fidelity Exploration Co.'s R. Saldarvier 1, Borrego Grant, sec 657, dr 1918 ft, sh and lime. Gholston Drlg. Co. and L. N. Shaw's Yeager 1, Sec. 346, sd 720 ft.

WILLACY COUNTY—W. W. Silk's Santa Rosa 1, blk 130, lot 16, Santa Rosa ranch, sp and sd.

WILLIAMSON COUNTY—Johnson & Ray's Oxford 1, Williams sur, dr 830 ft. G. L. Rowsey, Trustee's, Pumphrey 1, 2000 ft nwl and 450 ft swl W. West sur, dk. J. M. Russell's Nelson Estate 1, Justice sur, moving in.

ZAPATA COUNTY—R. Allison's Mrs. E. T. Garza 1, blk 5, sec 13, prep to sp. Merle Gunby et al's Mrs. Alice B. Haynes 1, Villas Grant, blk 4, ru. H. W. B. Oil Co.'s J. C. Cuellar 1, blk 3, sec 2, Pappas sub, Por. 34, td 1125 ft, move in heavier rig. Danvers and Harrison Oil Co.'s N. J. Vela 1, 686 ft nel and 300 ft nwl of blk 7, N. J. Vela sub, Por. 29, dr 300 ft.

TEXAS GULF COAST

AUSTIN COUNTY—I. T. I. O. & Johnson Bros' August Wangler 1, Kuykendall sur, Abst. 243, br.

BRAZORIA COUNTY—Amerada Pet Corp's Houston Farms Dev Co. 1, L. G. Bachelder sur, dr sandy lime 4380 ft, 16-in csg 1512 ft. Gillock Pet Corp's Truksa 1, H&TC No. 7 sur, spud. Jack Clark tr's Speer 1, J. F. Pinckney sur, hard sand cored 4251-54 ft, showing of dead oil. Holt et al's Griffith 1, J. B. Bailey sur, sd 4173 ft. W. H. McCarthy's Nat'l Life Ins. Co, 1, H. Austin No. 4, A-12, sur, sd after ru.

BRAZOS COUNTY—M. E. Wallace's Broach 1, W. Singleton sur, sd 368 ft.

BURLESON COUNTY—Southern Seaboard Oil Co's Coulter 1, A. Kennon sur, 10-in csg 498 ft, td 500 ft.

CHAMBERS COUNTY—Turnbull & Irwin's Sudindrof 1, H&TC No. 7 sur, dr ahead after setting surface csg 1150 ft.

FT. BEND COUNTY—Gem Oil Co.'s Farmer 1, Robt. Hodge sur, dr salt wtr sand 4280 ft. W. H. Scheper's Bartosh 1, H&TC No. 52 sur, dr 150 ft. Vico Oil Co's Darst 1, E. Powell sur, lcn. Wilkes et al's Norris 1, Geo. Teel sur, mim.

GALVESTON COUNTY — C&RG Drilling Co's Spoor 1, W. K. Wilson sur, temporarily abn 6577 ft. Humble O&R Co's Stewart 1, J. Sellers sur, dr sandy shale 6226 ft.

GRIMES COUNTY—Marshall et al's Dodd 1, Timothy Jones sur, laying water lines. W. D. Roan et al's Kelly 1, U. Sanders sur, dr shale 2100 ft, top Fayette 1620 ft.

HARDIN COUNTY—Wilcox Oil & Gas Co's Sternberg 1, G. Dorsey sur, dr sandy shale, sg 5010 ft, td 5180 ft. Alpha Pet Corp's Steinberger 1, H. Williams sur, co to bottom, td 7018 ft.

HARRIS COUNTY — General Crude Oil's Rorick est 1, J. C. Ogburn sur, dr sandy shale 3500 ft, Discorbis 2950 ft. Imperator Oil Co.'s Brooks 1, Vince sur, waiting on gas for fuel. Southland Oil Co.'s Galney 1, H&TC Blk 1, Sec. 4, sur, coring shale 2200 ft, 10-in csg 1000 ft. Emerald Pet. Co.'s Griffith 1, 9 miles s of Humble field, F. Bell sur, abn 4615 ft, salt water.

JEFFERSON COUNTY—Sun Oil Co's Long 1, John Blair sur, cored and drilled to 7168 ft, some oil and salt water.

LIBERTY COUNTY—Gulf Prod. Co's Kirby

The **GRAY RELEASE SPEAR** *has proven itself over a long period of time to be*

SAFE

MORE STRENGTH

than the pipe on which the tools are run is provided through the use of **HEAT TREATED ALLOY STEELS.** Fine pitched threads furnish the tremendous jacking power necessary to assure 100% Releasability under all conditions.

Complete stock for rental . . . operator if desired.

PHONE: WAYSIDE 2111

GRAY TOOL COMPANY

6102 Harrisburg Blvd.
HOUSTON, TEXAS

C-5, J. Pleasant sur, clearing lcn. Liberty Ind. Oil Co's Neal 1, S. Strong sur, dr shale 2365 ft. Extension Oil Co's Lovett 1, sw of Hull field, P. P. Dever sur, dr lime 2830 ft.

MONTGOMERY COUNTY — Humble O&R Co's Anna M. Platte 1, W. Barker sur, dr shale 4530 ft. Shell Pet. Corp's Creighton 1, J. Pevehouse sur, dr shale 1114 ft.

LOUISIANA GULF COAST

ACADIA PARISH—Standard Oil Co. of Kansas' J. Nouton 1, Sec. 34-8s-3e, has been taken over by Oswego Oil Co., td 1400 ft. Woodley Pet. Co.'s Daigle 1, Sec. 24-7s-1e, dr hard shale, 6828 ft.

BEAUREGARD PARISH — Federal Pet. Co.'s Lutcher Moore 1, Sec. 4-7s-12w, dr 8466 feet in hard sand; same operator's B-1, Sec. 26-6s-13w, dr shale 2160 ft.

CALCASIEU PARISH—Union Sulphur Co.'s Barbee Est 2, Sec 11-9s-8w, dr shale 6813 ft.

CAMERON PARISH—The Texas Co.'s Calcasieu Lake 1, Sec 1-14s-9w, dr hard shale, 6415 ft.

IBERIA PARISH—Grosse Tete Dev. Co.'s Augelloz 1, Sec 54-12s-7e, r 2270 ft.

JEFFERSON DAVIS PARISH — Humble O&R Co.'s Devilbiss 3, Sec 14-9s-4w, dr shale, 6635 ft; same operator's Kratzer 1, Sec 11-9s-4w, dr hard shale 2303 ft. Shell Pet. Corp.'s R. C. Jarigan 1, Sec 12-9s-4w, dr shale, 7352 ft. Tide Water Oil Co.'s Bourgeois 1, Sec 28-9s-5w, pb to 5100 ft, td 6107 ft, waiting on cement.

LA FOURCHE PARISH—Barnsdall Oil Co.'s Harang Plantation 1, Sec 5-17s-20e, ru.

PLAQUEMINES PARISH—E. A. Howe's Buras Levee 1, Sec 26-21s-30e, sd 1058 ft.

RAPIDES PARISH—C. D. Lowe's Barrett 1, 330 ft nw of se line and 880 ft ne of sw line Sec 40-5n-1w, lcn.

ST. MARTIN PARISH—The Texas Co.'s St. Martin Ld. Co. 1, Sec 17-8s-7e, dr shale 7571 ft.

ST. MARYS PARISH—Edwards Drilling Co.'s Chetemaches 1, Sec 34-13s-9e, sd 6501 ft, dk blown down.

VERMILION PARISH—J. C. & Lon Moore's Ulysse B. Breussard 1, Sec 32-11s-3e, dr shale 2006 ft.

VERNON PARISH — Anderson & Kerr Drilling Co.'s Nona Mills 1, Sec 25-2n-9w, abn 4094 ft.

NORTH LOUISIANA

BIENVILLE PARISH—Saline Drilling Co.'s Pardee 1, ne ne 27-14n-6w, elev 161.4 ft, dr 50 ft.

BOSSIER PARISH—F. M. Crow et al's Biedenharn 1, se se 23-21n-14w, sd 1045 ft, sg. Howard & Bird's Sam Gold 1, nw ne 36-20n-13w, dr 1115 ft, rock. Producers O&G Co.'s W. H. Werner 1, se se 7-17n-11w, drill stem stuck 3984 ft while testing drill stem.

CADDO PARISH—W. T. Bell et al's Bostick 1, sw sw 12-22n-16w, sd for water 2535 ft.

CALDWELL PARISH—Davis et al's La. Central Lbr. Co. 1, 14-11n-3e, sd 1850 ft. Terrell & Price's La. Central Lbr. Co. 1, nw ne 18-11n-3e, elev 206 ft, dr 2990 ft. Hester et al's Alston 1, ne sw 11-11n-16w, rur. Jack Clark et al's Moore 1, ne nw 1-13n-15w, dr 1020 ft. E. T. Oakes' Johnson 1, ne nw 30-13-15, coring lime 5370 ft.

OWNERSHIP MAPS

ST. LANDRY PARISH
LAFAYETTE PARISH
South Louisiana

We have just completed parish ownership maps of St. Landry Parish and Lafayette Parish, both drawn to scale 2" equals 1 mile.
St. Landry Parish in north half and south half sells for $8.00 per half or $15.00 complete.
Lafayette Parish in one map at $10.00.

Write or call

L. L. RIDGWAY COMPANY
Blue Prints
705½ Fannin St. Houston, Texas

DE SOTO PARISH—George LeGrand's Mrs. E. Vance 1, swc se 34-12-16, dk.

NATCHITOCHES PARISH—Clyde Creighton's Friedman Estate 1, swc of Friedman estate in 52-7-6, owdd, abn as Cane River Oil Co.-Friedman Estate 1. Matthew Forman et al's Poissoit 1, 9-10n-8w, rog. Plummer & McDaniel's Lizzie Walmsley 1, se sw 45-10n-8w, dr 5200 ft. Roy Raines et al's Fee 1, sw sw 28-9n-10w, sd 2255 ft for cas.

RAPIDES PARISH—C. D. Loe, Tr.'s Bentley Lbr. Co. 1, 20-5n-1w, rur.

RED RIVER PARISH—Tooke et al's J. Ober 1, 5-14n-10w, dr 2540 ft chalky shale. W. K. Williams' De Moss 1, ne ne 33-13-11, cored plug 2450 ft.

SABINE PARISH—Geo. L. Pace's De Soto Corp. 2, ne sw 27-10-13, dry ds test from 3050 ft to 3075 ft, dr 3075 ft.

ARKANSAS

FULTON COUNTY—Salem Dev. Co.'s I. S. Stephens 1, sw se 31-20-7w, sd 800 ft.

HEMPSTEAD COUNTY—Arkansas Drilling Co.'s Jones 1, ne se 11-14-24, set 10-in csg 160 ft. Dr. E. L. Austin's J. W. McWilliams 1, nw sw 19-13-23, dr 510 ft. F. W. Martin & Co.'s Lafferty 1, se nw 17-14-24, dk.

LA FAYETTE COUNTY—A. L. Erwin et l's Bodcaw 1, ne ne 19-16-23, lcn. Earl F. Fox's Coleman Bros. 1, nw ne 36-16-25, dr 1975 ft. W. H. Harvey's A. M. Allen 1, ne sw 18-19-24, rur. Douglas Lawn's Camp 1, sw se 14-15-23, dr 2405 ft.

LEE COUNTY—Ark. La. P. L. Co.'s E. McDonald 1, sw sw 28-1n-4e, dr 3050 ft.

MADISON COUNTY—H. L. Scott's Hughes 1, 14-15-25, sd 650 ft.

MILLER COUNTY — Beverley Oil Co.'s Commercial Nat. Bank 1, ne se 30-17-28, dk. W. F. Lacey's Gibson 1, sw nw 30-19-27, sd 3808 ft.

NEVADA COUNTY—Ira Gee's Scott 1, sw nw 23-10-22, dk.

UNION COUNTY — Alexander-Head Oil Co.'s Union Sawmill Co. 1, sw nw 28-17-13, sd 2300 ft. Mrs. R. K. Jones' J. Davis 1, nw nw 28-16-14, to test 2765 ft.

MISSISSIPPI

CLARKE COUNTY — Clarke County Oil Co.'s S. B. Kirkland 1, 10-2n-10e, wocs surface csg.

HANCOCK COUNTY—Gulf Ref. Co.'s R. J. Williams 1, ne ne 11-8s-15w, dr 2000 ft.

ISSAQUENA COUNTY — Pelican Oil & Gasoline Co.'s Steel Bayou Corpn. 1, sw nw 14-12n-8w, lub hung ds, td 3125 ft.

JONES COUNTY—Snow-Black Pet. Co.'s Watson 2, ne sw 24-17n-13w, dr 1700 ft.

MADISON COUNTY—H. A. Wilson, Tr.'s, Cepek 1, sw ne 24-9n-3e, co td 2340 ft.

MONROE COUNTY — Miss. Pub. Serv. Corp.'s Edwards & Carter 1, ne se 12-13-18, rog. P. J. McAlpine's Chas. Rye 1, se sw 22-15-17, to shoot formation, td 2917 ft.

PEARL RIVER COUNTY—Gulf Ref. Co.'s May L. Williams 1, se ne 35-5n-17w, to dr plug in 6⅝-in csg at 3696 ft, td 3707 ft.

RANKIN COUNTY—Love Pet. Co.'s Pearl River-Interior Lbr. Co. 1, sw sw 15-6n-2e, cem 10-in csg 860 ft.

SIMPSON COUNTY—Berry Corp.'s Berry 2, sw sw 33-2n-4e, wocs 6⅝-in csg.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 1, 14-14n-1e, shut in, td 3200 ft.

WASHINGTON COUNTY — Perkins & Dees' Lee 1, nw sw 33-15-8w, sd 1200 ft.

ALABAMA

CLARKE COUNTY—Magnolia Pet. Co.'s Scotch Lbr. Co. 1, sw ne 17-10n-3e, dr red shale 4020 ft.

LAMAR COUNTY — DeSoto O&G Co.'s Gardner 1, nw nw 22-15-16, sr td 4150 ft.

WYOMING

ALBANY COUNTY—Ohio Oil Co's Chappell 1, c se nw 28-21n-76w, dr Red Beds 3334 ft.

BIG HORN COUNTY—J. W. Bales' Parker 1, c sw sw 23-49n-89w, mim.

CARBON COUNTY—Earl W. Reader, Inc's Union Pacific 1, c sw sw 19-20n-83w, ur 4¾-in csg to bottom at 5100 ft. Ohio Oil Co's Sid Morris 1, c nw se 6-20n-77w, sd 1435 ft.

FREMONT COUNTY—Monongahela Oil Co. and Sidney H. Keoughan's Wisda 1, se se se 13-28n-93w, dr 2587 ft. Mid-American Oil Co's Test 1, s½ ne sw 4-28n-98w, lcn.

HOT SPRINGS COUNTY — California Exploration Co's Government 1, ne se ne 12-44n-98w, dr 1934 ft.

NIOBRARA COUNTY — Bowser-Satterfield Syndicate's West Virginia 1, nw nw 7-35n-62w, resumed after 3-year sd, dr 1530 ft.

SHERIDAN COUNTY—Sheridan Syndicate's C. C. Allison 1-A, sw se 15-55n-85w, dr 1150 ft.

MONTANA

CARBON COUNTY — Minnesota-Flatwillow Petroleum Co's Corbett 1, se sw se 1-6s-23e, dry and abn.

FERGUS COUNTY—H. C. Rowland et al's Woodward 1, se se sw 20-14n-24e, dr 2700 ft.

PONDERA COUNTY — California Co's Northwest Properties 1, sw ne se, dry and abn.

TETON COUNTY—E. K. Cheadle, Jr, and Bruce Radigan's Balsinger 1, ne se nw, dr 2100 ft, after running csg to 1990 ft.

COLORADO

ADAMS COUNTY—Riddle Petroleum Co.'s 1-C, sw 2-3s-66w, lcn.

FREMONT COUNTY—Waterville Oil Co.'s State 1, sw se 16-18s-69w, Phantom Canyon, co 2800 ft.

GRAND COUNTY—Colorado Oil Refining Co.'s Linke 1, se sw sw 13-1n-77w, dr in Pierre shale 765 ft, sg at 735 ft.

JACKSON COUNTY—Continental Oil Co.'s Government 3, nw ne 34-9n-78w, dr 520 ft.

PROWERS COUNTY — Trojan Oil & Gas Co.'s Lotus 1, nw ne ne 15-23s-46w, Lamar district, sd 3338 ft.

NEW MEXICO

EDDY COUNTY — Getty Oil Co.'s Cook-Ironsides 2, sw sw 8-20s-29e, pb from 1598 ft to test so at 1100-1124 ft.

SAN MIGUEL COUNTY—Cabra Springs Oil & Gas Co.'s Cabra Springs Ranch 1, ne se 22-12n-22e, sd 3561 ft.

SANTA FE COUNTY—Fisher & Wolcott's Hill 1, sw 6-10-6e, Barton Dome, dr below 1915 ft, so in brown sand at 1905 ft. R. E. Owens et al's Cantwell 1, nw ne 5-10n-9e, Cuerto Butte, dr 555 ft.

MICHIGAN

MIDLAND COUNTY—McClanahan Oil Co's Oliver 1, Porter twp, Sec 23, dr 3450 ft; Converse 1, Greendale twp, Sec 28, testing Traverse lime at 2955 ft. Geo. Hanner's Hoyt 1, Jasper twp, Sec 24, fsg 1150 ft. Greendale-Lee Oil Development's Hitsman 1, Lee twp, Sec 13, sd 2550 ft. Howard Patterson's Haskins 1, Ingersol twp, Sec 26, sd 840 ft. W. J. Sovereign's Mode 1, Geneva twp, Sec 25, lcn.

ISABELLA COUNTY—W. J. Bernier's Duncan 1, Vernon twp, Sec 9, so & g 3867-70, sd to test 3875 ft. McClanahan Oil Co's Sweeney 1, Denver twp, Sec 33, driving pipe 250 ft. Michigan Gas & Oil Co's Hanson 1, Rolland twp, Sec 33, rog. Lupher Drilling Co's Bear 1, Broomfield twp, nw ne, Sec 36, sp. Arbaugh Bros' Aldrich 1, Broomfield twp, c-ne se, Sec 22, lcn.

OGEMAW COUNTY—McClanahan Oil Co's Boutell 1, Ogemaw twp, Sec 5, dr 200 ft. C. A. Perry's Wobig Heirs 1, Mills twp, Sec 6, so 2138 ft, dr 2180 ft. W. C. Mee's Gibbs 1, Mills twp, Sec 30, sd 2280 ft. Burks White's Canard 1, Mills twp, Sec 22, sp and sd.

MONTCALM COUNTY — Daily Crude Oil Co's Gustavason 1, Home twp, Sec 2, driving pipe 250 ft; Christensen 3, Home twp, sec 3, water 3115 ft, so & g 3125, sd to test 3130 ft. Theodore Oil Co's Sherwin 1, Home twp, Sec 13, sd 3450 ft, no oil in Dundee, may pb to 3068 ft for re-test of Traverse so. Old Dutch Oil & Gas Co's Fargar 1, Belvadire twp, Sec 11, top Michigan Stray 1248 ft, sg at 1251 ft, gauged 5½ million ft at 1259 ft, sd waiting orders, may be mudded off and deepened for oil test. Walter and Miller's Durbin 1, Crystall twp, Sec 11, lcn. Rex Oil & Gas Co's Johnson 1, Home twp, Sec 17, sd 3150 ft; Albaugh 1,

Home twp, Sec 34, sd 1425 ft. Northern Oil Co's Robinson 1, Richland twp, Sec 27, sd 460 ft; McGilvery 1, Richland twp, Sec 34, sd 1300 ft. Tope-Voorhees-Blunt's Neff Ranch 1, Day twp, Sec 22, driving pipe 350 ft. Atha Oil Co's Davenport 1, Ferris twp, Sec 16, csg 6-in. 1400 ft. Mammoth Pet. Co's Thomas 1, Home twp, Sec 11, driving pipe 500 ft. Garfield Oil & Gas Co's Wymer 1, Home twp, Sec 11, dr 650 ft. Allen Park Oil Co's Stephens 1, Home twp, Sec 36, rog.

MECOSTA COUNTY—Hall-La Mee Synd's Oliver 1, Martiny twp, Sec 13, dr 400 ft. Bryan and Martin's Sheets 1, Millbrook twp, Sec 35, dr 325 ft. Columbia Oil & Gas Co's Hutchinson 1, Hinton twp, Sec 14, dr 800 ft. Colmur Oil & Gas Synd's Sapp 1, Morton twp, Sec 6, sp and sd.

SAGINAW COUNTY — Chapin Oil & Gas Co's Sutlif 1, Chapin twp, Sec 16, sd 950 ft. Fred Stork's Poultry Farm 1, Richland twp, Sec 33, rog. Smith Petroleum Co's Cement 1, Swan Creek twp, se se se, Sec 8, lcn.

LAPEER COUNTY—Gordon Oil Co's Smith 1, Arcada twp, Sec 4, Dundee 2286 ft, dr 2383 ft. Fred W. Craft's Gerwolds 1, Oregon twp, Sec 9, dr 400 ft. W. C. Sowell's Kohler-McKay 1, Oregon twp, Sec 4, co 200 ft.

NEWAYGO COUNTY — Newaygo Prospecting Co's Grass Lake 1, 16n-11w, Sec 7, testing so 3550 ft. Newaygo Oil Co's Bates 1, Sherman twp, Sec 12, sd 6650 ft. Muskegon Dev's Kolbe 1, Beaver twp, Sec 31, rog.

MISC.—Clare County: McClanahan Oil Co's Frackelton 1, Lincoln twp, Sec 18, Dundee 3951 ft, dr 3960 ft. Gratiot County: Mid State Dev's Yost 1, Bethany twp, Sec 27, sd 3400 ft. Arenac County: Oil State Corp's Sheffer 1, Mason twp, Sec 18, dr 2400 ft. Gladwin County: Atlas Drilling Co's Cronk 1, Gladwin twp, Sec 33, sd 125 ft; M. F. Whitehill's Kintner 1, Beaverton twp, s½ nw nw, Sec 11, lcn. Lanawee County: P. D. Snavely's Lindsay 1, Madison twp, Sec 6, sp. Osceola County: Sun Oil Co's Marble 1, Evart twp, Sec 8, dr 750 ft. Shiawassee County: John F. Hurley's Van Pelt 1, Rush twp, nw nw ne, Sec 35, lcn.

OKLAHOMA

ALPHALFA COUNTY—Tex-O-Kan Development's Acre 1, csw ne 14-24n-11w (owdd) td 6460 ft, swab to 5530 ft, recovered 40 bbls oil and wtr, sd.

ATOKA COUNTY—L. A. Fitts' Blankenship 1, ne nw 19-3s-10e, sd 630 ft for csg. Malernee et al's Greenville National Bank 1, nw se 36-2s-13e, so 2128-35 ft, sd 2150 ft.

BECKHAM COUNTY—Price & Watchorn's Heard 1, ne sw 17-8n-26w, td 765 ft, fsg bailer.

CADDO COUNTY—Denver P&R Noe 1, nw sw sw 34-10n-10w, pipe stuck 11,230 ft.

CARTER COUNTY — Hudson & Poland's Sullivan 1, ne se 5-5s-1w, so 2938-58 ft, sd 3505 ft. George Pace et al's M. Jack 1, ne nw nw 10-4s-4w, sg 1810-12 ft, sd for wtr 1869 ft. Daphine Oil Co.'s Hooks 1, se nw nw se 5-1s-2w, sd 1305 ft for wtr. McHenry et al's Ratliff 1-A, nw sw 28-1s-2w, so 540-606 ft, bailing.

CLEVELAND COUNTY—Phillips Pet Co et al's Community-Baker 1, cse nw, 11-9n-2w, Hunton 6716 ft, dr 6821 ft.

COAL COUNTY—Brookshire et al's Rowland 1, nw ne ne 18-3s-10e, dr 3655 ft.

COMANCHE COUNTY — F. F. Stevens' Green 1, se sw 2-1n-13w, sd 1120 ft. Heiden-Taylor's Crutcher 2, cne 11-1n-12w, dr 640 ft.

COTTON COUNTY—Ben Russell's Fowler 1, se nw 21-4s-12w, sd 3570 ft.

GRADY COUNTY—Mid-Western Oil, Inc. Carter 1, nw ne se 32-3n-7w, dr 1670 ft.

HARPER COUNTY—Sinclair Prairie's Neff 1, nw se 21-26n-24w, sd 265 ft.

HUGHES COUNTY—Olympic Oil Co's McCaslin 1-A se nw nw 12-9n-8e, td 3442 ft, spray oil and wtr. Smith et al's Farmer 1, se nw 32-5n-9e, fsg 200 ft.

JACKSON COUNTY—Gypsy Oil Co's Kelly 1, nec 10-1n-20w, (owpb) recementing csg, td 1678 ft.

JOHNSTON COUNTY—Oklahoma Oil Corp's Maytubbi 1, sw ne se 11-2s-8e, set 8 in 2150 ft, co.

KAY COUNTY—Carter Oil Co's W. S. Cline 1, se sw se 16-28n-5e, set 12½ in 1291 ft, dr 1365 ft.

KINGFISHER COUNTY—Jadeka Dev Co's Frakes 1, csw ne sw 16-15n-6w, sd for wtr 5111 ft.

KIOWA COUNTY—Bailey & Johnson's Potts 1-A cel nw nw sw 31-7n-14w, sd 330 ft.

LEFLORE COUNTY—East Oklahoma O&G Co's Metcalf 1, swc 2-4-26e, co 1500 ft, carrying 18 in csg. Murdock et al's Fee 1, sw ne sw 15-5n-25e, fsg 2425 ft.

LINCOLN COUNTY—L. G. Hulse's Sloan 1, sw nw se 19-17n-3e, co new hole 843 ft. Texas Co's Gessman 1, se ne 33-14n-4e, rip csg 3839-3842 ft, flow 105 bbls 3 hrs, est 2½M. Mid-Continental Co's Bolby 1, cse sw 27-12n-2e, rur.

LOGAN COUNTY—W. N. Anthony's Fruin-Eckman 1, se sw 4-16n-1e, top Wx 5269 ft, circulating.

McCLAIN COUNTY — Denver P&R Co's Newborn 1, cse sw 22-5n-1e, dr 6178 ft.

MURRAY COUNTY—T. E. Revels et al's Wolfe 1, nec 18-1n-2e, sd 2430 ft. Gilcrease Oil Co's Brown 1, swc 26-1n-2e, sd 1610 ft.

NOBLE COUNTY—Magnolia's Crawford 1, se nw 27-21n-2e, dr 3673 ft. Continental Oil Co et al's Bennett 1, se nw 19-20n-1w, td 5232 ft, will pb & test upper Wx. Vaughn Dev Co's Loula 1, ne se sw 16-22n-1e, br.

OKFUSKEE COUNTY—Delton Oil's Fixico 1, sec 7-11n-8e, dr 3543 ft. Carter Oil Co's W. H. Dill 1, cnw se 2-1n-8e, dr 1440 ft.

OKLAHOMA COUNTY—Gypsy Oil Co et al's Community-Grant 1, cse nw 27-13n-4w, td 7480 ft, Wx 7472 ft. Springrose Dev Co's Edwards 1, cse se 19-11n-1e, 400 ft of drill pipe in hole, sd 6540 ft in shale.

OSAGE COUNTY—Empire O&R Co's 1, se ne 3-25n-3e, dr 3433 ft. Peters Pet Co and Norbla O&G Co's 1, swc 15-25n-5e, sd 1712 ft. Norbla O&G Co's 1, nw se 31-24n-7e, dry sand 2575-90 ft, dr 2675 ft.

PITTSBURG COUNTY — Arkomis Cummings 1, nw ne se 29-4n-14e, dr 760 ft.

PONTOTOC COUNTY—Riddle et al's Barnes 1, se nw se 21-5n-4e, td 2910 ft, dr by drill pipe. Boyle et al's Newborn 1, sw ne 31-5n-4e, td 2240 ft, pb, wocs. Jarnett Pet Co's Johnson 1, se nw 28-4n-4e, dr 890 ft. Dandridge et al's Stafford 1, nwc 5-1n-6e, set 10 in 668 ft, sd 680. Gillette & Kroeger's Duver 1, nw se 1-1n-6e, sd 75 ft. Paul R. Robb's Vittetor 1, cne se 11-5e-4e, sd for wtr 4936 ft. Schermerhorn Oil's Banks 1, sw se se 25-2n-6e, cellar.

POTTAWATOMIE COUNTY — Stanolind O&G Co and Amerada Pet Corp's Goodman 1, sw nc ne 5-10n-4e, td 4385 ft, set 9-in, wocs. Phillips-Gypsy et al's Flynn 1, ne nw 17-6n-3e, Belle City 2760 ft, dr 3850 ft.

SEMINOLE COUNTY—Wrightsman Oil Co's Smith 1, nw se 25-10n-7e, dr 650 ft. Moran et al's Brindle 1, sw ne 27-6n-5e, rig.

STEPHENS COUNTY—Carter Oil Co's Hilderbrand 1, csw se ne 1-3s-7w, so 1023-26 ft, dr 1360 ft. Carter Oil Co's T. H. McCasland 1, cnw nw sw 22-1s-4w, rig.

WASHITA COUNTY—Anadarke Basin's Ash Wolf 1, ne sw 23-9n-17w, ru & sd. Oklahoma Mid-Western's Dock 1, swc 21-8n-18w, td 2185 ft, co.

KANSAS

BARBER COUNTY—Lario et al's Whelan 1, cnw 32-31s-11w, dr 4173 ft. I.T.I.O. et al's George 1, cse sw 12-33s-10w, set 15-in 291 ft, dr 1450 ft. National Ref. Co's Harader 1, nw sw nw 11-31s-13w, 15-in 481 ft, dr 1050 ft.

BARTON COUNTY—Atlantic Oil Prod Co's Straub 1, cse nw 36-18s-11w, set 8-in 2991 ft, dr 3066 ft. Harris-Haum & J. Brouk's Dietz 1, se se se 21-16s-15w, dr 692 ft.

BUTLER COUNTY—L. C. Hay et al's Bolin 1-A, se sw se 36-26s-6e, pump 12½ bbls oil & 20 bbls wtr 24 hrs, sd 2176 ft.

CLAY COUNTY—Seidel Bron's Younker 1, cs½ se nw 21-9s-4e, dr 920 ft.

COWLEY COUNTY—Roth & Farrout's Fox 1, se sw 35-30s-7e, dr 2016 ft.

DICKINSON COUNTY — Dutch Oil Co's Phillips 1, cne nw 15-15s-1e, sd 2025 ft.

ELLSWORTH COUNTY — Elwell et al's Campbell 1, sw 20-17s-7w, dig cellar.

GREENWOOD COUNTY—McGinnis' Sample 1, ne ne se 16-25s-10e, dr 1480 ft. Greeley et al's Salter 1, sw se sw 28-25s-12e, dr 265 ft.

HARPER COUNTY — Wood Brothers' Anthony 1, csw sw 17-31s-9w, fsg 4233 ft.

HARVEY COUNTY—Hollow et al's Swafford 1, nw ne nw 8-22s-1w, set 15-in 735 ft, 13-in 1440 ft, dr 1450 ft.

KINGMAN COUNTY — W. C. McBride's Wooleridge 1, nw ne 16-27s-7w, set 15-in 755 ft, td 1207 ft.

McPHERSON COUNTY — Marileen Oil & Gas Co and Goering Brothers' Decker 1, nw se 20-18s-1w, td 1995 ft, pb 1860 ft, dr by tools. Palmer & Phillips' Moddelmog 1, ne ne nw 8-21s-1w, ru.

NEMAHA COUNTY—Rose Oil et al's Penwell 1, ne nw se ne 16-3s-3e, (owdd) otd 1720 ft, ru to drill deeper.

RENO COUNTY—Sinclair Prairie Oil Co's

COOL AS A DRAUGHT
from a mountain spring
Gotkool
WATER CANS
& COOLERS
With the GOTT Water Cooler handy, you will always be assured of a fresh supply of pure drinking water kept delightfully cool — it's health insurance...Order one from your supply store today!
Gott
WATER COOLER
GOTT Water Coolers: 3 gal; 5 gal; 8 gal; 10 gal; and 20 gal.
GOTT Water Cans 1½ gal; 3 gal; 5 gal; and 10 gal.
H. P. GOTT MFG. CO., Winfield, Kansas
KEEP PURE DRINKING WATER ALWAYS HANDY

William M. Barret, Inc.
Consulting Geophysicists
Specializing in Magnetic Surveys
Contracts accepted for domestic and foreign projects, using the most improved instrumental and interpretative technique.
GIDDENS-LANE BUILDING
SHREVEPORT, LOUISIANA

W. P. JENNY
Consulting
Geologist and Geophysicist
Gravimetric Seismic
Magnetic Electric
Surveys and Interpretations
2102 Bissonett HOUSTON, TEXAS

INDEPENDENT EXPLORATION COMPANY
Seismograph Surveys
2210 Esperson Building
Houston Texas

OPERATIONS ENGINEERS INC.
Torsion Balance Surveys
SHELL BUILDING
HOUSTON FAIRFAX 0636

THE FORT WORTH LABORATORIES
Field Gas Testing. Analysis of oil field brines, gas, minerals and oil. Soil Thermometers, Hydrometers and Laboratory Glassware.
F. B. Porter, B.S., Ch. E., Pres.
R. H. Fash, B.S., Vice-President
828½ Monroe St., Ft. Worth, Tex.

PATENTS
Patents, Trade Marks, Copyrights and Infringement Litgation
HARDWAY & CATHEY
428-29-30 Bankers Mortgage Bldg.
Phone Fairfax 8232 Houston, Texas

HIRSCH, SUSMAN AND WESTHEIMER
ATTORNEYS AT LAW
32nd Floor Gulf Building
Houston, Texas
Specializing in Oil Law and Land Law

PATENTS
JESSE R. STONE
and LESTER B. CLARK
Patents, Infringment Litigation, Trade Marks
Associated with
Andrews, Kelley, Kurth & Campbell
2200 Gulf Bldg. Houston, Texas
Capitol 7245

GULF COAST MAP
Copies of the map included in issue of July 16 are available at $1.00 a copy.
Larger prints in one color and taken from the original tracing, size 42" x 98" are available
ON CLOTH $12.50 ON PAPER $5.00
Address THE OIL WEEKLY
3301 Buffalo Drive, Houston, Texas

Shepherd 1, se nw 22-26s-9w, dr 4338 ft. L. H. Wentz's Metcalf 1, se ne sw 2-24s-7w, td 3370 ft, ur 8-in.

RICE COUNTY—Langston et al's Markle 1, ne ne sw 1-20s-9w, sd 2425 ft. Aylward Trees et al's Belder 1, sw se ne 27-20s-7w, abd 3753 ft. Robertson et al's Johnson 1, nw sw 22-19s-8w, dr 2215 ft. Reserve Development Co's Heinz 1, ne sw se 8-18s-10w, pump 20 bbls per day, may abandon. Deitrick et al's Fitzpatrick 1, cne ne 30-21s-8w, dr 2480 ft, hfw. Elwell et al's Porter 1, ne nw 5-18s-7w, ru.

ROOKS COUNTY—Ashby et al's Doughty 1, csw sw 15-8s-19w, dr 2607 ft. Phillips Pet Co's Depita 1, csw sw 31-8s-17w, pump 50 bbls oil & 60 bbls wtr 14 hrs.

RUSSELL COUNTY—Central Pet Co's Benso 2, nw ne sw 4-14s-15w, rig. Lario Oil & Gas Co's Neidenthal 1, nec 23-14s-15w, dr 150 ft.

SEDGWICK COUNTY — Trees Oil Co & Derby Oil Co et al's McMinn 1, nw sw ne 36-26s-1e, sd 2219 ft. Cromwell-Lewis' Hammon 1, sw nw 23-27s-2w, (owdd) spd. Sovereign Oil Co's Nichols 1, cnw se 20-25s-1w, dr 2850 ft. E. B. Shawver et al's Schulte 1, ne 13-28s-2w, 8-in 3021 ft, dr 3130 ft.

SUMNER COUNTY — Morgan & Glynn's Mercer 1, nw ne nw 36-32s-1w, 6-in 3350 ft, dr 3500 ft. Wentz & Continental's Small 1, nw sw 5-33s-4w, 15-in 97 ft, dr 421 ft.

TREGO COUNTY — Alma Pet Co et al's Rhodes Estate 1, csw sw 14-11s-23w, fsg 4105 ft. Mid-Kansas O&G Co's Kline 1, sw se 19-14s-24w, sd 800 ft.

CALIFORNIA

KERN COUNTY

BUENA VISTA HILLS — E. C. Arnold's No. 1, 34-31-24, dr sandy shale 4165 ft. Western Pet. Co.'s U.S.P.P. 6, 24-32-24, lcn.

COMANCHE POINT—Comanche Oil Co's No. 1, 15-32-29, dr sandy shale 4010 ft. Tejon Ridge Oil Co's No. 1, 23-32-29, sd 200 ft.

EDISON—Elyod Pet Corp's No. 1, 19-30-30, to abn 1910 ft. Mitchell-MacMillan Co's No. 1, 8-30-29, rig. Mountain View Dev Corp's Spangler 1, 12-30-28, sd 4300 ft.

LOST HILLS—Associated Oil Co's Williamson 1, 2-26-20, pb to 6850, to run liner for test, rolling out 11¾-in csg at 5700 ft.

McKITTRICK—Standard Oil Co's No. 45, 15-30-22, dr sandy shale 3617 ft. Welport Oil Co's No. 105, 26-29-21, co 1195 ft.

MT. POSO—Associated Oil Co's Fortine 1, 30-27-28, ready to spud.

NORTH SEMITROPIC—S. T. Alexander's Shields 1, 29-25-21, sd 1426 ft.

PIONEER ANTICLINE — Fisher & Welton's Harris 1, 35-11-23, dr shale 1155 ft.

TEMBLOR HILLS—Robt Foster's No. 1, 2-32-22, dr shale 910 ft.

WHEELER RIDGE—Badger Oil Co's El Tejon 1, 31-1-19, sd 6001 ft. new company organizing to take over.

KINGS COUNTY

AVENAL—Carl Weller's Baby King 2, 11-23-16, running 6⅝-in csg, to carry, 1425 ft.

TULARE LAKE DIST. — Armadillo Gas Co's No. 1, 32-22-20, wocs 1745 ft. Commonwealth Cons. Gas Co's No. 1, 21-22-20, dr shale 1690 ft; No. 2, rigged and idle. Tulare Basin Gas Co's No. 2, 2-33-19, sd 1208 ft.

ALPAUGH—Trico Oil & Gas Co's Magee & Stone 1, 33-24-22, dr sandy shale 2710 ft.

MADERA COUNTY

DOS PALOS—Pure Oil Co's Chowchilla 1, 7-10-14, dr shale and sand 5270 ft.

SAN JOAQUIN COUNTY

TRACY—Milham Exploration Co's Connolly 1, 5-4-5, wocs 6¼-in csg 4970 ft, co to bottom, tested trace of gas, to perforate 4450-4350 ft, for further tests, td 5800 ft.

SANTA BARBARA COUNTY

GOLETA—Shell Oil Co's Bishop 1, 20-4-28, dr hard shale 1426 ft. Hastain Stone's Simonds-Campbell 1, 9-4-28, sd 2789 ft.

LOMPOC—Lompoc Pet Co's Beauterbaugh 2, 18-7-34, circulating oil to loosen pipe, td 2975 ft.

LOS ALAMOS—Petroleum Securities Co's Hancock-Los Alamos 1, 31-8-32, bldg rig.

SANTA MARIA—Union Oil Co's Moretti 1, 24-10-34, pumped 100 bbls, 16 grav oil, sanded up, co td 2389 ft.

SISQUOC—Royalty Service Corp.'s Sisquoc 1, lcn.

SAN LUIS OBISPO COUNTY

CHOLAME—Willett Oil Assn's Jack 2, 10-25-15, dr shale 1960 ft.

NORTH MIDWAY—Midway Peak Oil Co's No. 1, 3-32-22, td 950 ft, test showed nothing, to dr deeper.

VENTURA AVENUE

CONEJO—American Oil Co's Powell 1, 33-2-20, sd 3060 ft.

HOPPER CANYON—Commander Oil Co's No. 6-F, 13-4-19, rur. Oak Ridge Oil Co's Moran 3, 1-4-19, dr shale 975 ft.

LAS POSAS—Las Posas Pet Co's Mahan 1, 22-3-20, td 7370 ft, pb to 6750 ft, trying to locate wtr.

OJAI—Rancho Oils' Rancho Santa Ana 1, T 4, R 23, material on lcn.

PIRU—Piru Oil Co's Holser 1, 14-4-18, dr shale 635 ft.

SANTA PAULA—J. W. Mosher's No. 1, 22-4-21, co, td 2160 ft.

SESPE—H. A. Ivers' No. 11, 1-4-20, co 1475 ft. Merchants Pet Co's Cochran 4, 1-4-20, redr 760 ft, td 1280 ft. Sullivan & Roberts' No. 1, 28-5-19, dr shale 390 ft. Topa Topa Oil Co's No. 1, 33-5-19, co 3030 ft.

SIMI—American Drilling Co's No. 1, 6-2-17, dr shale 425 ft. C. L. Anderson's No. 13, 36-3-18, dr shale 850 ft. Williamson & Danaker's No. 1, 36-3-18, sd 1010 ft.

SULPHUR MOUNTAIN — Wm. A. Kirk's No. 5, 21-4-22, ran blank liner to 1990 ft, td 2110 ft.

MISCELLANEOUS

FRESNO COUNTY—G&E Dev Co's No. 1, 36-16-14, rigged and idle. Western Gulf Oil Co's SPL 1, 15-17-15, swabbed some oil and gas at 8600 ft, to plug higher for another test, td 8868 ft. The Texas Co's No. 1, 35-20-14, in gray cretaceous sand 1392 ft, to abn. Bergman Oil Co's Oro Loma 1, 12-12-11, fsg 6006 ft. Russ Oil Syn's No. 1, 28-12-11, sd 4020 ft.

MONTEREY COUNTY—Jas. M. Douglas' No. 1, 36-22-9, dr shale 4175 ft.

YOLO COUNTY—Pacific Northern Gas & Oil Co's No. 1, 23-12-3, sd 6770 ft.

SOUTHERN CALIFORNIA

ARTESIA DIST.—Vanco Dev Co's Millard 1, 25-3-12, rig.

ATHENS DIST.—John W. Sherman's Johnson 1, 2-3-14, lcn. Woodward Oil Co's No. 1, 12-3-14, dr hard sandy shale 4495 ft.

ATWOOD—Midrich Drilling Co's Vejar 1, 26-3-9, dr sandy shale 2484 ft.

BREA CANYON—Pressel-Perry-Tull's Baird 1, 30-2-9, dr hard sand 3090 ft.

CARBON CANYON — Tehema Pet Corp's Kramer 1, 33-2-8, dr sandy shale 2208 ft.

FAIRVIEW DIST.—Explorers Drilling Co's Norris 1, 9-6-10, sd 960 ft. Speik Oil Co's Derby 1, 9-6-10, sd 1055 ft.

FULLERTON — Union Oil Co's Fullerton Heights 1, 22-3-10, dr sand and shale 4925 ft.

HUNTINGTON BEACH — On Tidelands. Black Eagle Oil Co's No. 1-B permit 194, 32-5-11, sd 3987 ft.

NEWPORT—Platt & Collins' No. 1, 14-6-10, dr brown shale 1456 ft. Pioneer Drilling Co's Banning 3, 29-6-10, co 6452 ft.

NORTH LONG BEACH—Geo. L. Clayton's No. 1, 31-3-12, dr shale 6600 ft.

PICO—Frontier Oil Co's No. 1, 12-2-12, wocs, td 1460 ft.

PLACENTIA—Placentia Dev Co's Verde 1, 35-3-9, redr to 3040 ft, td 4250 ft, sd.

SAUGUS—International Oil Dev. Co.'s Powell 1, 34-5-16, dr hard gray sand 2321 ft.

SURF—W. G. Bradford's B. B. 1, foundation.

WEST WHITTIER — Midfield Oil Co's Walker 1, 19-2-11, preparing to run formation tester to test 4050-55 and 4110-4155 ft zone, td 4867 ft.

SAN BERNARDINO COUNTY — Great American Pet. Co.'s Gapco A-1, 18-2-8, sd 2725 ft; Gapco B-1, sidetracking fish, td 3100 ft. Gapco C-1, foundation.

SAN DIEGO COUNTY—San Diego Gas & Pet. Corp.'s No. 1, 32-18-2, to cement 11¾-in csg 4020 ft, td 4070 ft.

New Equipment for the Field

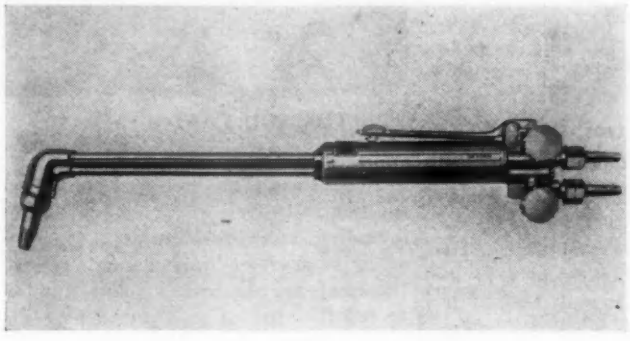
Machinery....Tools....Catalogs....Books

▼ ▼ ▼

Cutting Blowpipe

LINDE AIR PRODUCTS COMPANY

Linde Air Products Company, 30 East 42nd Street, New York City, has announced a new oxy-acetylene cutting blowpipe, known as Type C-34. The manufacturer claims this blowpipe incorporates into one unit several features of design and operation.



Linde Cutting Blow Pipe

The Type C-34 was designed essentially to serve as a general duty blowpipe, but is capable of doing heavier work if necessary. Some of the outstanding features claimed for this blowpipe are new design of cutting oxygen valve, a long external cutting valve lever; nozzles with seat protectors; closer spacing of the heating orifices about the cutting oxygen opening; new nozzle sizes; interchangeable large-capacity ball-type inlet needle valves, and interchangeable low pressure injector or medium pressure mixer.

Selective Speed Jack Shaft

YOUNG ENGINE COMPANY

The Universal selective speed jack shaft assembly, product of Young Engine Company, Canton, Ohio, is so constructed that the power from one or two gas or Diesel multiple-cylinder engines can be utilized to operate the draw works and furnish power for one or two slush pumps located at either end of jack shaft. The jack shaft can either be incorporated in the draw works assembly, or it can be mounted on a steel-skid base which would then be placed between the draw works and the engines. One advantage of this plan is that use can be made of two standard or twin drilling engines with reverse clutches, the same as used on cable tool work except that the belt pulleys would be replaced by chain sprockets connected by chains to driven sprockets on jack shaft.

With this arrangement, any combination of power requirements can be obtained by operating the proper clutches. By engaging clutches, power from either one or both engines can be applied to the draw works lineshaft, and power from both engines can be used when coming out of the hole. For rotating the table the power from any motor of either engine can be applied to the draw works lineshaft. At the same time the other engine can drive the slush pumps at any desired speed irrespective of the speed of the engine driving the rotary table. If required, the power from either one or both engines can be applied to the inner shaft by engaging two clutches.

The Universal selective speed jack shaft assembly consists of an inner shaft which runs in two bronze bushed sleeves and two Timken self-aligning bearings. These sleeves in turn are supported in the three large Timken self-aligning pedestal bearings.

Putty

B. F. GOODRICH RUBBER COMPANY

B. F. Goodrich Rubber Company, Akron, Ohio, has announced a new type putty which contains rubber. It is similar in appearance and consistency to painter's putty, and the manufacturer claims several advantages for it.

The putty requires no mixing, since it contains little oil. It is resistant to corrosive chemicals and fumes, and because of its rubber content offers a high resistance to moisture. It also adheres well to steel surfaces. The putty is called "Plastikon" and is marketed in 15-pound, 75-pound and 225-pound cans for commercial users, and in pint cans for small jobs.

CONSTANT research in field and laboratory, the use of superior crude oils, and the most modern refinery equipment are the three stones in the foundation upon which Humble quality has been built.

HUMBLE
OIL AND REFINING
COMPANY

Producers, Transporters, Refiners and Marketers of Petroleum and Its Products

NEWS *from the Industry's* EQUIPMENT MAKERS

Auburn Gas Line Completed on Schedule in Spite of Difficulties

New York State Natural Gas Company has completed 21.7 miles of 10-inch gas line, which is a branch off the 20-inch Syracuse line, south of Onandago and which leads into Auburn, New York.

Operations started on April 1, 1934. The line was laid under contract by Rich & Company of Bradford, Pennsylvania, with Sylvester Rich in charge and with Adam Schreiber of the New York State Natural Gas Company supervising.

This new line will carry natural gas from the Tioga and Hebron fields to the rich industrial city of Auburn, New York. Skanateales is the largest city encountered on the route and at this writing it is impossible to state if this city will use the gas from this new line. At present, Skanateales does not even have the convenience of a manufactured gas service.

Jones & Laughlin seamless steel pipe with an outside diameter of 10¾-inches, weighing 28.035 pounds to the foot, A.P.I. standards and in 40-foot lengths was used.

Dresser couplings were used throughout the line and the laying crew reached a high point of performance in laying and jointing 116 joints per day.

Approximately 150 men have been steadily employed on this project, but only 24 men have been used on the laying crew. This crew, with its record of 4640 feet of pipe laid in one day, represents a highly efficient organization where team work is smoothly synchronized.

The line was built to withstand pressures of 800 pounds per square inch although operating pressures will be much lower.

Edward L. Stoughton, New Wico President, Has Had Rapid Rise

Edward L. Stoughton has been elected president of Wico Electric Company, Springfield, Massachusetts. He joined the Wico Company in 1911 as shipping clerk when it was housed in a small loft. In 1912, when the company moved to larger quarters, Mr. Stoughton was promoted to the position of stockkeeper.

In 1913 he was named purchasing agent, from which position he was made assistant treasurer in 1915. After another two years had passed he became treasurer and general sales manager. In the succeeding years he served the company well in various capacities, including vice president. On March 1 of this year he was named general manager of the entire plant and retained the title of vice president.

Stoughton is an active civic worker. At this time he is vice president of the Springfield Rotary Club, president of the National Metal Trades' Association and a director of the Employers' Association. He is also a member of the Masonic fraternities and a Shriner.

EDWARD L. STOUGHTON

Bolters at Work on Auburn Gas Line.

BULLETINS

Diesel Engines

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has issued Bulletin No. S-500-B6C, which is descriptive of the vertical four-cycle, direct injection type Diesel engines manufactured by the company. Features of construction and operation are given.

Catalog

C. F. McAdams, Inc., Fort Worth, Texas, has issued Catalog No. 4, describing and illustrating items manufactured by the organization. Items included in the catalog are chisels, punches, drills, bars, calking tools, tubing expanders, awls, hammers, jointers, bits, cutters, gads, spades, cotton and hay hooks, pump cup leathers, packing rings and other specialties.

Pumps

Pennsylvania Pump & Compressor Company, Easton, Pennsylvania, recently issued two bulletions, No. 221 describing the multi-stage centrifugal type, and No. 223 showing the "Penn-Motor" pumping units.

Bulletin No. 104, also recently issued by the company describes and illustrates the air compressors manufactured in the same plant.

Squeaks *from the* BULL WHEEL

GeoPHYSICS?

"You want me to raise your salary, eh?" growled a Wellington boss to his employe. "Give me at least two good reasons."

The employe gazed meekly at his employer and murmured, "Twins."

Keeper—You think you're sane, eh? Well, if we give you your liberty will you keep away from liquor and women?"

Asylum Inmate—I certainly will!

Keeper—Then you stay in. You're still crazy!"

Golfer (far off in the rough)—Say, caddy, why do you keep looking at your watch?

Caddy—It isn't a watch, sir; it's a compass.

A traveling man says that he called the attention of a western Kansas hotel man that it was against the law to use roller towels. "I know it," said the landlord, "but that towel was up before the law was passed and the law is not retroactive." The law has been on the books over 20 years.

"Did you take any fiction with you to the summer hotel?"

"Oh, yes, I brought the book that describes the place."

A young naval student was being put through the paces by an old sea captain. "What would you do if a sudden storm sprang up on the starboard?" "Throw out an anchor, sir." "What would you do if another storm sprang up aft?" "Throw out another anchor, sir." "And if a terrific storm sprang up forward what would you do?" "Throw out another anchor." "Hold on," said the captain; "where are you getting all your anchors from?" "From the same place you're getting your storms, sir."

Business Man—What do you do with all these pictures you paint?

Modernist Artist—I sell them, sir.

Business Man — Well, name your terms, my man, I've been looking for a salesman like you for years.

His wife determined to cure him of his bad ways, and with the aid of a sheet and an electric torch transformed herself into a very fair imitation of a ghost. Then she went to the drunkard and shook him.

"Whas that?" murmured the toper.

"Satan," came the reply in a sepulcharl tone.

"Shake handsh, old horsh, I married your sister."

One of the turns in the entertainment after the annual dinner of a famous London firm was provided by a conjuror. For one of his tricks he asked for the assistance of some one from the audience.

A man went up, and while the audience waited for the conjuror to continue the trick, some one in the front row called: "Hi, don't you make 'im disappear. 'E's our treasurer."

GETTIN' PRETTY DEEP, EH?
Cut the round trips then, by demanding DIAMOND METAL on your bits.
DIAMOND METAL CO. INC.
HOUSTON, TEXAS
EXPORT DISTRIBUTORS: OILFIELD EQUIPMENT CO. INC. 30 CHURCH ST. NEW YORK CITY

NEWS *from the* *Industry's* EQUIPMENT MAKERS

Auburn Gas Line Completed on Schedule in Spite of Difficulties

New York State Natural Gas Company has completed 21.7 miles of 10-inch gas line, which is a branch off the 20-inch Syracuse line, south of Onandago and which leads into Auburn, New York.

Operations started on April 1, 1934. The line was laid under contract by Rich & Company of Bradford, Pennsylvania, with Sylvester Rich in charge and with Adam Schreiber of the New York State Natural Gas Company supervising.

This new line will carry natural gas from the Tioga and Hebron fields to the rich industrial city of Auburn, New York. Skanateales is the largest city encountered on the route and at this writing it is impossible to state if this city will use the gas from this new line. At present, Skanateales does not even have the convenience of a manufactured gas service.

Jones & Laughlin seamless steel pipe with an outside diameter of 10¾-inches, weighing 28.035 pounds to the foot, A.P.I. standards and in 40-foot lengths was used.

Dresser couplings were used throughout the line and the laying crew reached a high point of performance in laying and jointing 116 joints per day.

Approximately 150 men have been steadily employed on this project, but only 24 men have been used on the laying crew. This crew, with its record of 4640 feet of pipe laid in one day, represents a highly efficient organization where team work is smoothly synchronized.

The line was built to withstand pressures of 800 pounds per square inch although operating pressures will be much lower.

Edward L. Stoughton, New Wico President, Has Had Rapid Rise

Edward L. Stoughton has been elected president of Wico Electric Company, Springfield, Massachusetts. He joined the Wico Company in 1911 as shipping clerk when it was housed in a small loft. In 1912, when the company moved to larger quarters, Mr. Stoughton was promoted to the position of stockkeeper.

In 1913 he was named purchasing agent, from which position he was made assistant treasurer in 1915. After another two years had passed he became treasurer and general sales manager. In the succeeding years he served the company well in various capacities, including vice president. On March 1 of this year he was named general manager of the entire plant and retained the title of vice president.

Stoughton is an active civic worker. At this time he is vice president of the Springfield Rotary Club, president of the National Metal Trades' Association and a director of the Employers' Association. He is also a member of the Masonic fraternities and a Shriner.

EDWARD L. STOUGHTON

Bolters at Work on Auburn Gas Line.

BULLETINS

Diesel Engines

Worthington Pump and Machinery Corporation, Harrison, New Jersey, has issued Bulletin No. S-500-B6C, which is descriptive of the vertical four-cycle, direct injection type Diesel engines manufactured by the company. Features of construction and operation are given.

Catalog

C. F. McAdams, Inc., Fort Worth, Texas, has issued Catalog No. 4, describing and illustrating items manufactured by the organization. Items included in the catalog are chisels, punches, drills, bars, calking tools, tubing expanders, awls, hammers, jointers, bits, cutters, gads, spades, cotton and hay hooks, pump cup leathers, packing rings and other specialties.

Pumps

Pennsylvania Pump & Compressor Company, Easton, Pennsylvania, recently issued two bulletions, No. 221 describing the multi-stage centrifugal type, and No. 223 showing the "Penn-Motor" pumping units.

Bulletin No. 104, also recently issued by the company describes and illustrates the air compressors manufactured in the same plant.

Squeaks *from the* BULL WHEEL

GeoPHYSICS?

"You want me to raise your salary, eh?" growled a Wellington boss to his employe. "Give me at least two good reasons."

The employe gazed meekly at his employer and murmured, "Twins."

Keeper—You think you're sane, eh? Well, if we give you your liberty will you keep away from liquor and women?"

Asylum Inmate—I certainly will!

Keeper—Then you stay in. You're still crazy!"

Golfer (far off in the rough)—Say, caddy, why do you keep looking at your watch?

Caddy—It isn't a watch, sir; it's a compass.

A traveling man says that he called the attention of a western Kansas hotel man that it was against the law to use roller towels. "I know it," said the landlord, "but that towel was up before the law was passed and the law is not retroactive." The law has been on the books over 20 years.

"Did you take any fiction with you to the summer hotel?"

"Oh, yes, I brought the book that describes the place."

A young naval student was being put through the paces by an old sea captain. "What would you do if a sudden storm sprang up on the starboard?" "Throw out an anchor, sir." "What would you do if another storm sprang up aft?" "Throw out another anchor, sir." "And if a terrific storm sprang up forward what would you do?" "Throw out another anchor." "Hold on," said the captain; "where are you getting all your anchors from?" "From the same place you're getting your storms, sir."

Business Man—What do you do with all these pictures you paint?

Modernist Artist—I sell them, sir.

Business Man — Well, name your terms, my man, I've been looking for a salesman like you for years.

His wife determined to cure him of his bad ways, and with the aid of a sheet and an electric torch transformed herself into a very fair imitation of a ghost. Then she went to the drunkard and shook him.

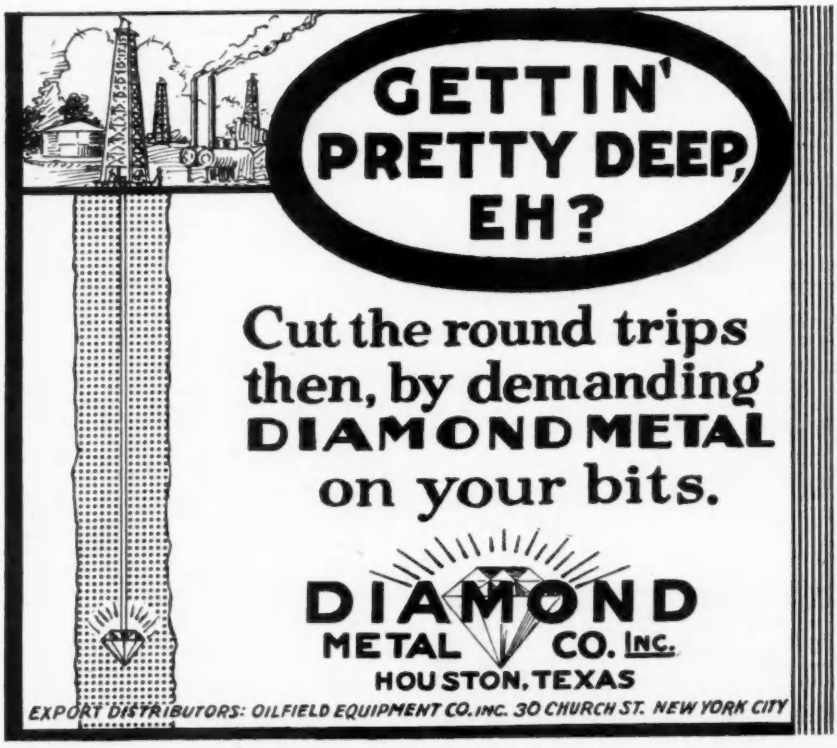
"Whas that?" murmured the toper.

"Satan," came the reply in a sepulcharl tone.

"Shake handsh, old horsh, I married your sister."

One of the turns in the entertainment after the annual dinner of a famous London firm was provided by a conjuror. For one of his tricks he asked for the assistance of some one from the audience.

A man went up, and while the audience waited for the conjuror to continue the trick, some one in the front row called: "Hi, don't you make 'im disappear. 'E's our treasurer."


GETTIN' PRETTY DEEP, EH?
Cut the round trips then, by demanding DIAMOND METAL on your bits.
DIAMOND METAL CO. INC.
HOUSTON, TEXAS
EXPORT DISTRIBUTORS: OILFIELD EQUIPMENT CO. INC. 30 CHURCH ST. NEW YORK CITY

FOR SALE
·Equipment·

LINE PIPE—Several miles good quality 2⅜-in., 8thd used line pipe. Houston yards. Also several miles of 2-in., 1800-lb. test, 11½thd. Very best grade with 3⅝ to 4¼-in. collars. About 1½ miles good 3-inch.

USED TUBING—KILGORE—Full string of good 2-in. 11½thd. Regular (not upset) Lapweld Tubing with ⅝-in. used Sucker Rods. Very attractive price if purchased together or may be purchased separately. Kilgore yards.

SURFACE PIPE—KILGORE—Yard stocks of good quality 12¾-in. and 10-in. Lapweld Casing for surface pipe.

USED CASING—KILGORE—Several strings of good used 5-3/16 in. 17-lb. 11½thd. Lapweld Casing. Good stocks of 20-lb., 24 lb., and 26-lb. 7-in. O.D. (6⅝) 10thd., long collar Lapweld Casing.

DRILL PIPE CASING—Several strings best quality 6⅝-in. O.D. (6¼) Drill Pipe Casing ready for delivery from Kilgore, Texas, and Wichita, Kansas, yards. All thoroughly shopped in our plant. New threads, new couplings. Shopped the Bridgeport way. Priced f.o.b. Mid-Continent and Gulf Coast points for delivery from nearest shipping point. Excellent quality and economical pipe for oil string.

LINE PIPE—PAMPA—4 miles of extra good 2-in., 1800-lb. test, 11½thd, 3⅝ in. Collar used line pipe. Also several miles of extra good quality 3-inch and some 4-inch. Pampa yards.

USED TUBING AND RODS—PAMPA—Several strings of good used 2-in., 11½thd. Regular (not upset) Lapweld Tubing. One string of 2-in. Seamless. Two strings of 2½-in. 11½thd. regular (not upset) Lapweld. And several strings of good ⅝-in. Sucker Rods. All good values.

USED DRILL PIPE—PAMPA—Special price on 2,132-feet, 6⅝ in, 22.20-lb., National Seamless Used Drill Pipe with API Tool Joints. Consists of 37 Doubles and 24 Singles.

USED CASING—TUBING—LINE PIPE—TULSA—We are daily moving various kinds and grades of used tubular products in and out of our Tulsa distributing yards. For prices and information on stocks at that point, phone Ralph Hague, 4-8580 Tulsa; or Wichita Office, LD-59. Call collect.

NEW TUBING—RUSSELL—Several strings of NEW 2-in., 4.60-lb. National API Regular (not upset) 11½thd. Seamless Tubing for delivery from Russell yards.

USED TUBULAR PRODUCTS—CHASE—Good stocks of 2-in., 3-in. and 4-in. used Line Pipe; also 12½ and 15½-in. used Casing. Quick delivery to the Chase territory on any size of Casing from Wichita and McPherson stocks.

USED SUCKER RODS—WICHITA—Several strings of ⅝-in., ¾-in., and ⅞-in. All have been sorted and worked over and are of a better grade than the ordinary used rod.

(All material offered subject to prior sale.)

Phone or Wire at our expense—Collect
From anywhere for prices and further information.

PHONE OR WIRE - COLLECT -
BRIDGEPORT
MACHINE COMPANY
WICHITA KANSAS
or any Bridgeport Store or Sales Office

Advertisers' Index

Abercrombie Pump Co.
American Askania Corp.
American Association of Petroleum Geologists
American Cable Co.
American Iron & Machine Works
American Roller Bearing Co.
American Steel & Wire Co.
Apex Construction Co.
B. K. Appleman ... 63
Authorized Appleman Bit Service
Axelson Manufacturing Co.

Baash-Ross Tool Co.
Baldwin-Duckworth Chain Corp. ... 70
Baker Oil Tools, Inc. ... 13
Baroid Sales Co.
The Barrett Co.
William M. Barret, Inc. ... 78
Mills Bennett Production Co.
Bradford Motor Works
Brauer Machine & Supply Co.
Breckenridge Chemical Co.
The Brewster Co.
Bridgeport Machine Co. ... 17 and 82
Broderick & Bascom Rope Co.
Buck & Stoddard, Inc.
Burlington-Rock Island Railroad
Butler Manufacturing Co.
A. M. Byers Co.
Byron Jackson Co.

Cameron Iron Works ... 20
Caterpillar Tractor Co.
The Cavins Company ... 67
Chain Belt Co.
Chemical Process Corp.
Climax Engineering Co.
Coastal Oil Finding Co.
Cockburn Oil Corp.
Columbian Steel Tank Co.
Continental National Bank
Continental Supply Co.
Fred E. Cooper Co.
Cooper-Bessemer Corp.
The Corbett Corp. ... 34
W. H. Curtin & Co.

Darling Valve & Mfg. Co.
Dayton Rubber Mfg. Co.
C. L. Decker
Detroit Graphite Co.
Alexander Deussen
Diadem Oil Co.
Diamond Metal Co. ... 81

H. John Eastman
Geo. H. Echols
Elliott Core Drilling Co.
Emsco Derrick & Equipment Co.
Emsco-Falk
Fairbanks Morse Co.
Fenwick-Reddaway Manufacturing Co.
First National Bank in Houston
Ford Motor Co.
Fort Worth Laboratories ... 78
Franklin Valveless Engine Co.
Frick-Reid Supply Corp.

The Garlock Packing Co.
Gas Lift Engineering Co.
Gaso Pump & Burner Mfg. Co. ... 38
Gearench Manufacturing Co.
General Electric Co.
H. P. Gott Manufacturing Co. ... 77
B. F. Goodrich Rubber Co.
Gray Tool Co. ... 71 and 75
Gray Kerotest
The Guiberson Corp.
Gulf Publishing Co. ... 18
Gulf States Utilities Co.

Halliburton Oil Well Cementing Co. ... Front Cover
Hardway & Cathey ... 78
Haynes Stellite Co.
Hazard Wire Rope Co.
C. M. Heeter & Sons Co.
Hirsch, Susman & Westheimer ... 78
Houston Lighting & Power Co.
Houston Oil Field Material Co.
Houston Ready-Cut House Co.
Hughes Tool Co. ... Back Cover
Humble Oil & Refining Co. ... 79
Hyatt Roller Bearing Co.

Independent Exploration Co. ... 78
Ingersoll-Rand Co.
International Cement Corp.
International Derrick & Equipment Co. ... 55
International Harvester Co.
International Nickel Co.

Byron Jackson Co.
Jarecki Manufacturing Co.
W. P. Jenny ... 78
Jensen Brothers Manufacturing Co. ... 61
S. M. Jones Co.
Jones & Laughlin Steel Corp.

Kobe, Inc.
Kerotest Manufacturing Co. ... 57

Lacy Co.
Larkin Packer Co.
Layne & Bowler Co.
The Lyne-Wells Co.
Lenox Hotel
Link Belt Co.
Ludlow Valve Manufacturing Co.
LufKin Foundry & Machine Co.

MacClatchie Manufacturing Co.
J. F. Mahoney
D. S. Mair Machinery Corp.
Maloney Tank Mfg. Co.
Martin-Decker Corp.
F. G. Masquelette & Co.
J. H. McEvoy & Co.
Mengden & Sons Co. ... 69
Geo. S. Mepham Co.
Merchants Phot Service
Merco Nordstrom Valve Co.
Mid-Continent Supply Co.
Miller Sand Pump Co.
Mission Manufacturing Co
Lee C. Moore & Co.
John C. Myers

National Bank of Commerce
National Bank of Tulsa
The National Supply Co.
National Tube Co.
Norvell-Wilder Supply Co.

Oil Center Tool Co.
The Oil Well Improvements Co. ... 65
Oklahoma Gas & Electric Co.
Operation Engineers, Inc. ... 78
Osage Metal Co.
Oster-Williams

The Parkersburg Rig & Reel Co.
Patterson-Ballagh Corp.
Pelican Well Tool & Supply Co.
Pennsylvania Shipyards, Inc.
Petroleum Equipment Co.
Petroleum Iron Works
Petroleum Rectifying Co.
Pittsburgh Equitable Meter Co.
Pittsburgh Steel Co.
Portable Rig Co.
Price-Trawick, Inc.

Rector Well Equipment Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Republic Portland Cement Co. ... 30
Republic Steel Corp. ... Third Cover
The Republic Rubber Co.
Rex Supply Co.
Ridge Tool Co.
L. L. Ridgeway Co. ... 76

Scandanavia Belting Co. ... 61
Second National Bank
Seismic Exploration, Inc.
Separafine Chemical Sales Co.
Shaffer Tool Works
Shell Union Oil Corp. ... 4
Sinclair Refining Co.
SKF Industries, Inc.
South Chester Tube Co.
Southern Pacific Lines
Southern States Co.
Howard Smith Co.
E. M. Smith Co.
Sperry-Sun Well Surveying Co. ... 28
Strake Oil Corp.
State Bit Co.
Jesse R. Stone & Lester B. Clark ... 78
Sun Oil Co.

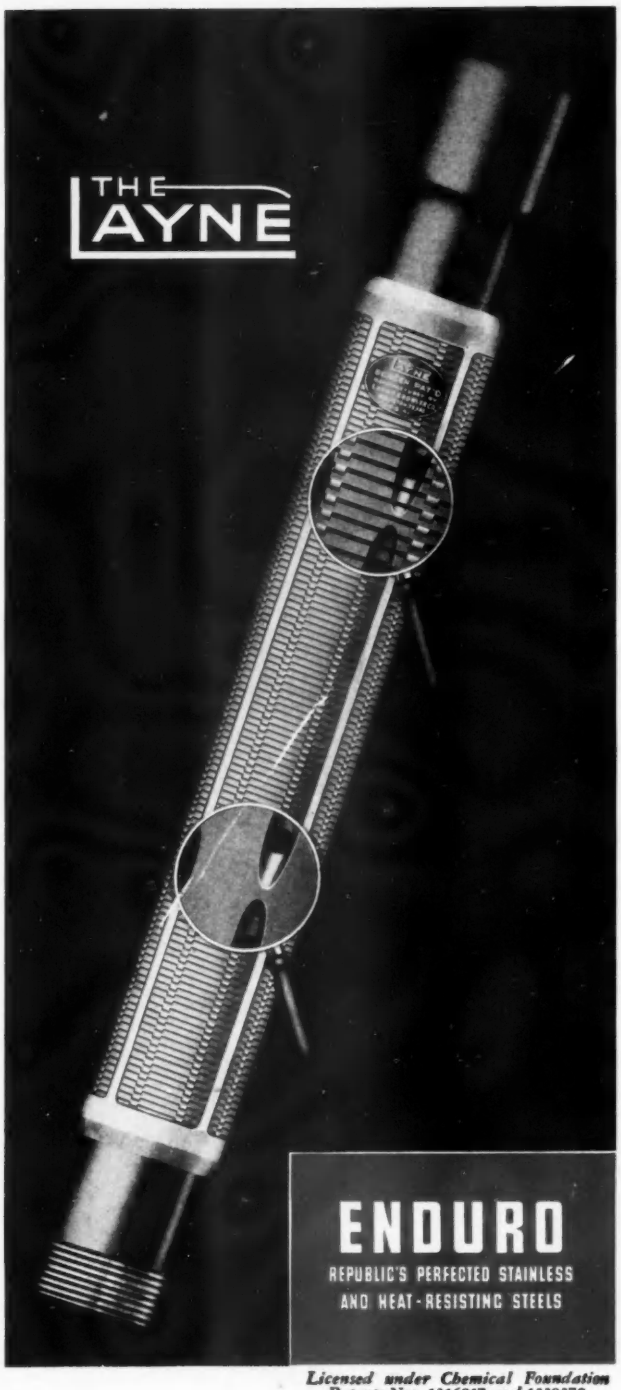
The Texas Co.
Texas Electric Service Co.
Texas Iron Works
Texas Rubber & Specialty Corp.
Texas Power & Light Co.
Toledo Pipe Threading Machine Co. ... 54
Torsion Balance Exploration Co.
Tretolite Co.
Tulsa Oil Thief Co.
Twin Disc Clutch Co. ... 22

United States Rubber Co.
Union Carbide & Carbon Corp.
Union Wire Rope Co. ... Second Cover
United Gas Public Service Co.

The Vellumoid Co.

Waukesha Motor Co.
John F. Weinzierl
Western Pneumatic Co.
Wheatley Bros.
Whitney Manufacturing Co.
Wickwire-Spencer Steel Co. ... 35
J. H. Williams & Co. ... 36
Williamsport Wire Rope Co.
Wilson Supply Co.
WKM Co.
Wyatt Metal & Boiler Works

Youngstown Sheet and Tube Co.
Yount-Lee Oil Co.
Zipper Pulling Machine Co.



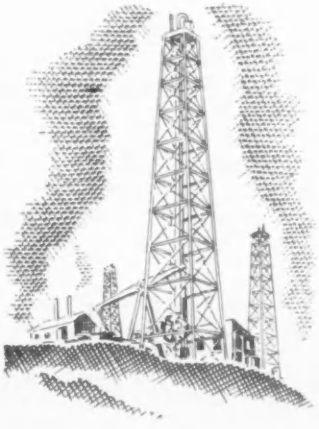
Licensed under Chemical Foundation Patents Nos. 1316817 and 1339378.

enduro

INTRODUCES A NEW STANDARD OF STRAINER PERFORMANCE

Through the use of ENDURO strainer wire, Layne and Bowler Co., Houston, Texas, has at last overcome that most common and expensive cause of strainer trouble—corrosion—and with the backing of Republic Steel Corporation can now say to operators in every territory—"Here's a strainer wire that will not corrode—even where salt and acid conditions are severe."

ENDURO is Republic's Perfected Stainless Steel—steel alloyed with chromium, nickel and other elements that combine to make it a truly noble metal. It is much stronger than ordinary steel. It is the same composition all the way through. It does not rust or corrode. Salt has no effect upon it. Acid cleaning does not affect it. The life of the metal should equal the life of the well in which the strainer is used.



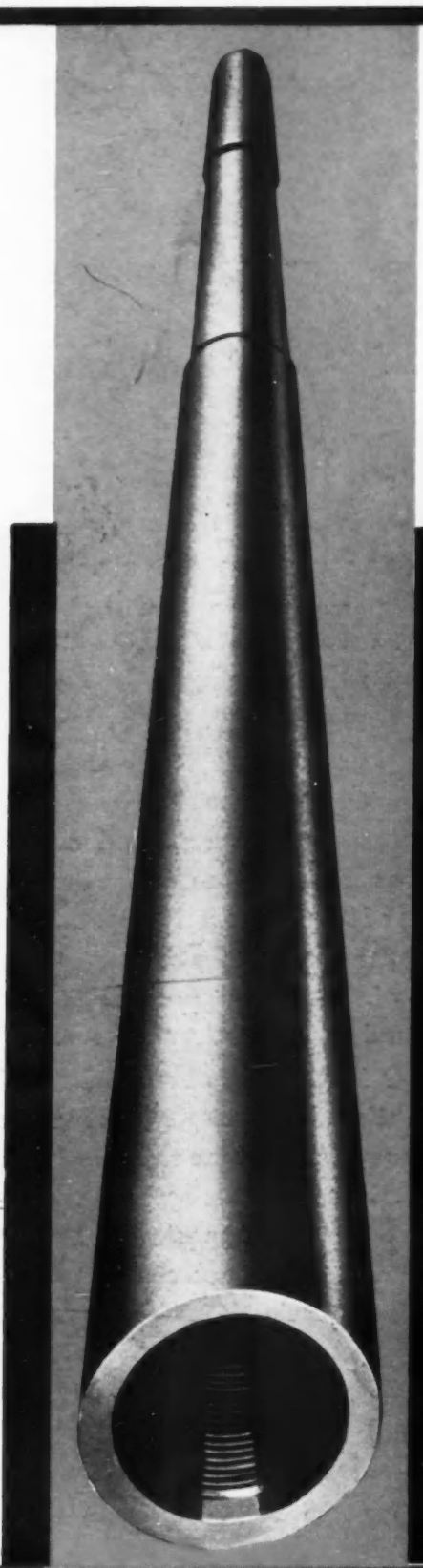
ENDURO has found a host of other applications in the oil industry—in handling acid sludge—in fittings and valves—in pump parts and in many parts of the modern refinery equipment that is fast making obsolete the old.

Write for complete descriptive literature.

CENTRAL ALLOY DIVISION . . MASSILLON, OHIO

REPUBLIC STEEL CORPORATION

GENERAL OFFICES YOUNGSTOWN, OHIO



FOR *Tougher* AND *Stronger*

DRILL COLLARS

USE *Hughes*

HUGHES DRILL COLLARS ARE MANUFACTURED FROM SELECTED ALLOY STEEL AND ARE GIVEN THE SAME SCIENTIFIC HEAT TREATMENT AS HUGHES ALLOY STEEL TOOL JOINTS TO SECURE TOUGHNESS AND MAXIMUM STRENGTH.

●

Every Drill Collar is accurately bored and machined.

●

Manufactured to your specification in lengths up to 20 feet.

HUGHES TOOL COMPANY

Service Plants:
LOS ANGELES, CALIF.
OKLAHOMA CITY, OKLA.
MIDLAND, TEXAS

Main Office and Plant:
HOUSTON,
TEXAS

Export Office:
19 RECTOR STREET,
NEW YORK CITY